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VOLUME XXXVIII • NUMBER 1

Drug Therapy of Hypertension
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G. D. Aurbach, M.D.

Shaking Chills Related to Occult Lymphoma
B. A. Chabner, M.D., J. Easton, M.D., and
V. T. DeVita, M.D.

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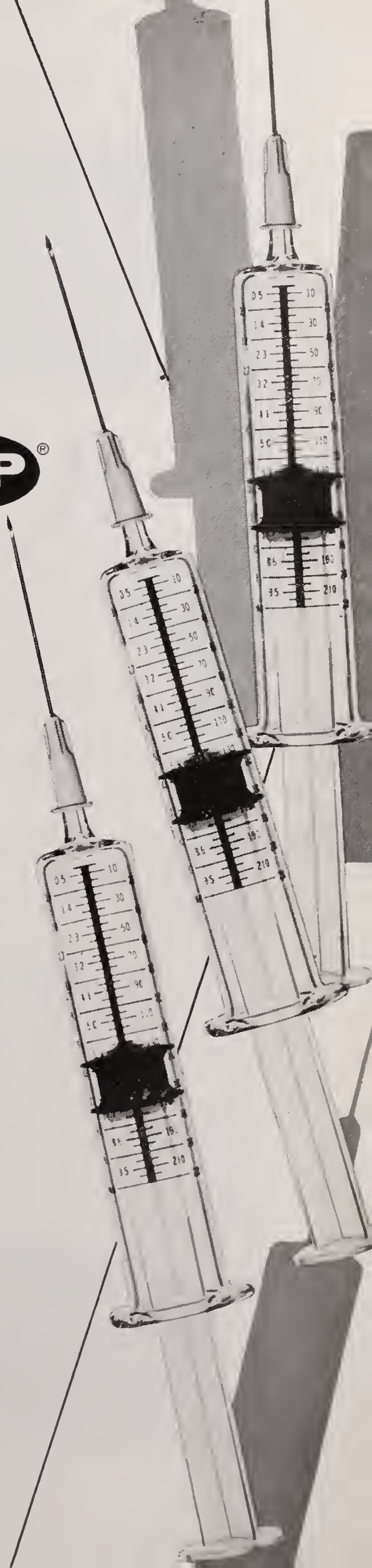

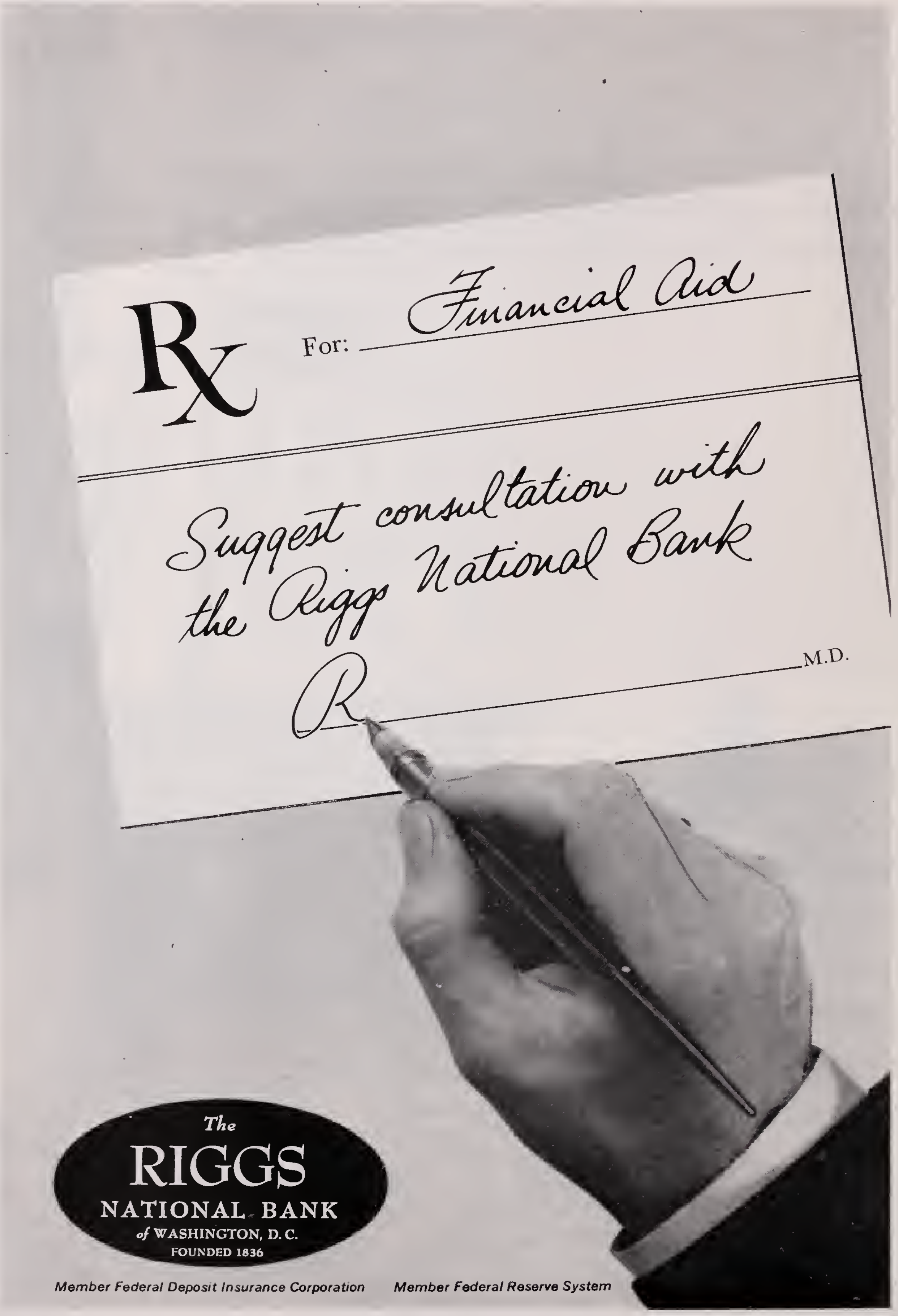
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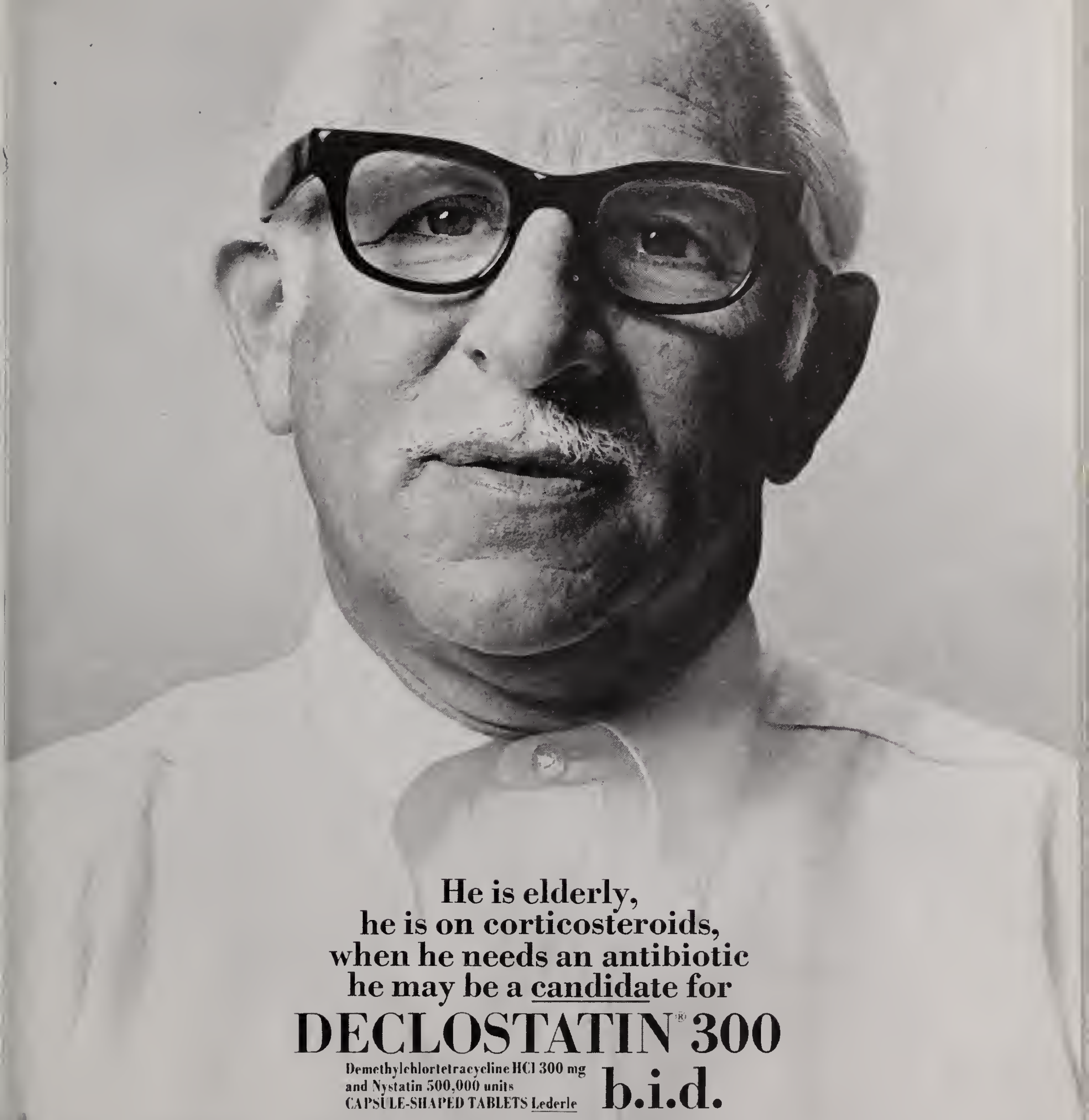

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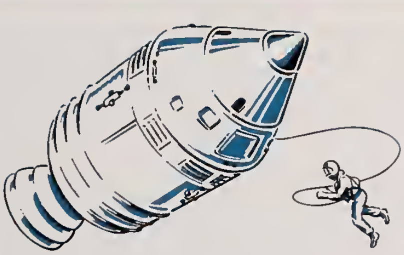

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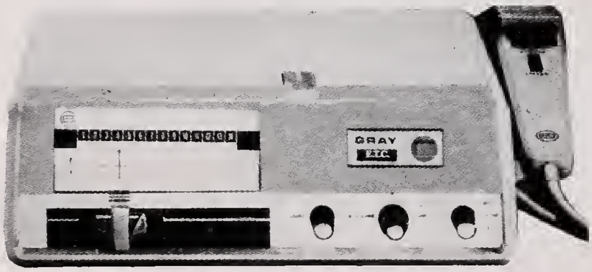

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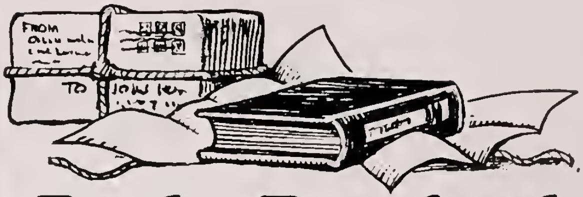

Books Received

Surgical Pathology, 4th ed. Lauren V. Ackerman, M.D., in collaboration with Harvey Butcher, Jr., M.D. Price, $27.50. Pp. 1140, with 1268 figures. St. Louis: Mosby, 1968.

The Country Doctor and the Specialist. Fred Lyman Adair, M.D. Paper. Pp. 215. Maitland, Fla.: Adair Award Fund, 1968.

Synopsis of Pathology, 7th ed. W. A. D. Anderson, M.A., M.D., F.A.C.P., F.C.A.P., and Thomas M. Scotti, A.B., M.D. Price, $10.50. Pp. 957, with 408 illustrations and 3 color plates. St. Louis: Mosby, 1968.

Clinical Methods in Uveitis. The Fourth Sloan Symposium on Uveitis. Edited by Samuel B. Aronson, M.D., Charles N. Gamble, M.D., Ernest K. Goodner, M.D., and G. Richard O'Connor, M.D. Price, $18.25. Pp. 248, with 66 illustrations. St. Louis, Mosby, 1968.

Bray's Clinical Laboratory Methods, 7th ed. Revised by John D. Bauer, M.D., Philip G. Ackermann, Ph.D., and Gelson Toro, Ph.D. Price, $14.85. Pp. 764, with 174 illustrations and 16 color plates. St. Louis: Mosby, 1968.

Orthoptics: Theory and Practice. Hans G. Bredemeyer, M.D., and Kathleen Bullock, D.B.O.(T.). Price, $13.75. Pp. 284, with 134 figures. Original art work by Sallie Gloeckner, M.A. St. Louis: Mosby, 1968.

Comprehensive Review for Medical Technologists. Edited by Francis E. Dolan, Ph.D. Price, $6.95. Pp. 181. St. Louis: Mosby, 1968.

Practical Psychiatry for the Internist. Douglas Goldman, M.D., and George A. Ulett, M.D., Ph.D. Price, $9.85. Pp. 168. St. Louis: Mosby, 1968.

Instructions for Patients. H. Winter Griffith, M.D. Price, $25.00. Pp. 670. Philadelphia: Saunders, 1968.

Questions and Answers on Contact Lens Practice. Jack Hartstein, B.S. (Med.), O.D., M.D. Foreword by T. E. Sanders, M.D., and Introduction by Bernard Becker, M.D. Price, $10.75. Pp. 199, with 90 illustrations. St. Louis: Mosby, 1968.

Symposium on Ocular Therapy. Volume III. Under the auspices of the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology. Edited by Irving H. Leopold, M.D. Price, $13.00. Pp. 143, with 17 illustrations. St. Louis: Mosby, 1968.

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Contraindication: Penicillin hypersensitivity.

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Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

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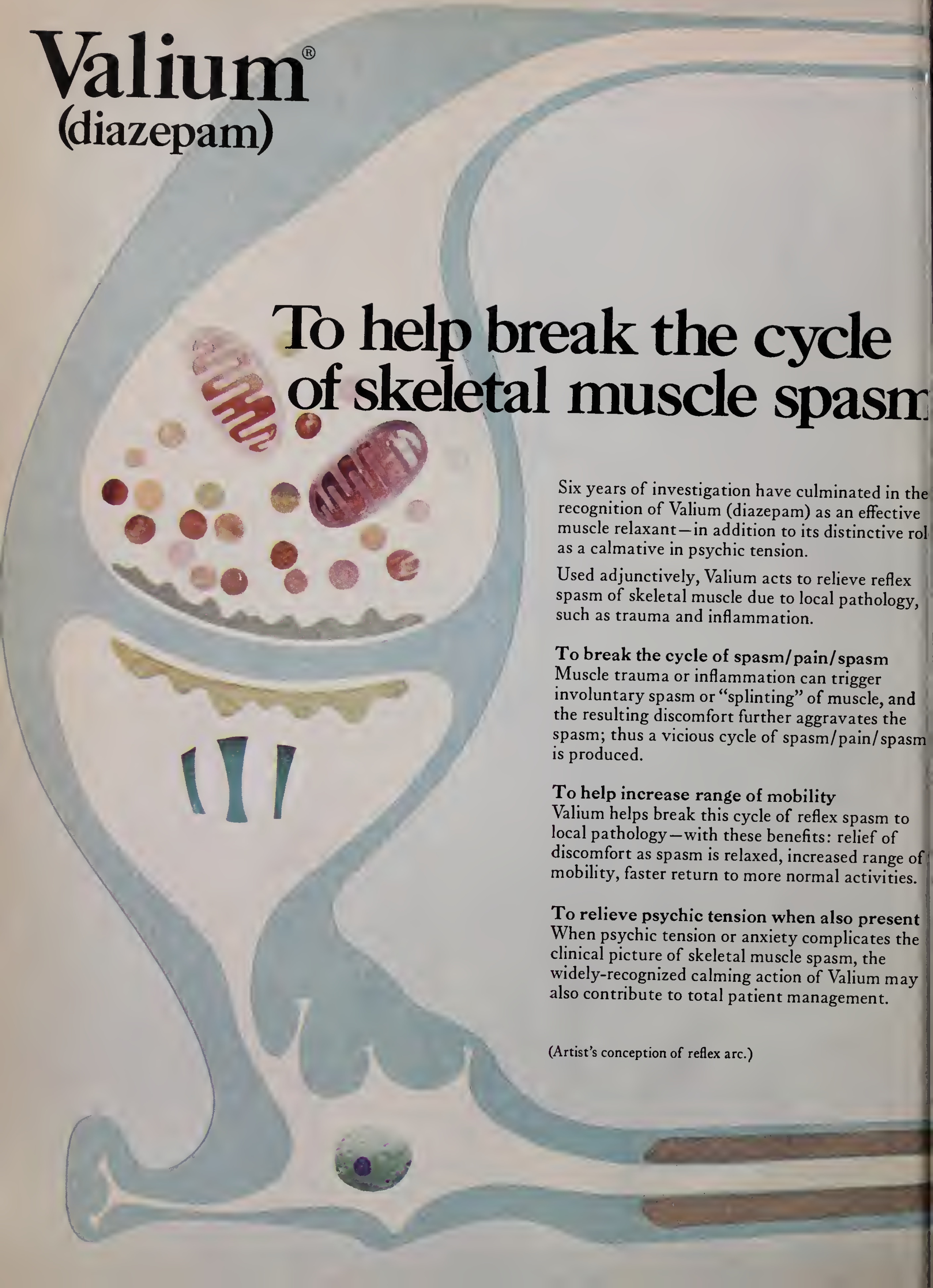
(diazepam)



To help break the cycle of skeletal muscle spasm

Six years of investigation have culminated in the recognition of Valium (diazepam) as an effective muscle relaxant—in addition to its distinctive rol as a calmative in psychic tension.

Used adjunctively, Valium acts to relieve reflex spasm of skeletal muscle due to local pathology, such as trauma and inflammation.

To break the cycle of spasm/pain/spasm
Muscle trauma or inflammation can trigger involuntary spasm or "splinting" of muscle, and the resulting discomfort further aggravates the spasm; thus a vicious cycle of spasm/pain/spasm is produced.

To help increase range of mobility
Valium helps break this cycle of reflex spasm to local pathology—with these benefits: relief of discomfort as spasm is relaxed, increased range of mobility, faster return to more normal activities.

To relieve psychic tension when also present
When psychic tension or anxiety complicates the clinical picture of skeletal muscle spasm, the widely-recognized calming action of Valium may also contribute to total patient management.

(Artist's conception of reflex arc.)

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms have occurred following abrupt discontinuance. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Valium® (diazepam)

2-mg, 5-mg, or 10-mg tablets, t.i.d. or q.i.d. and when skeletal muscle spasm and psychic tension interfere with sleep: add 1 tablet, h.s., to t.i.d. dosage

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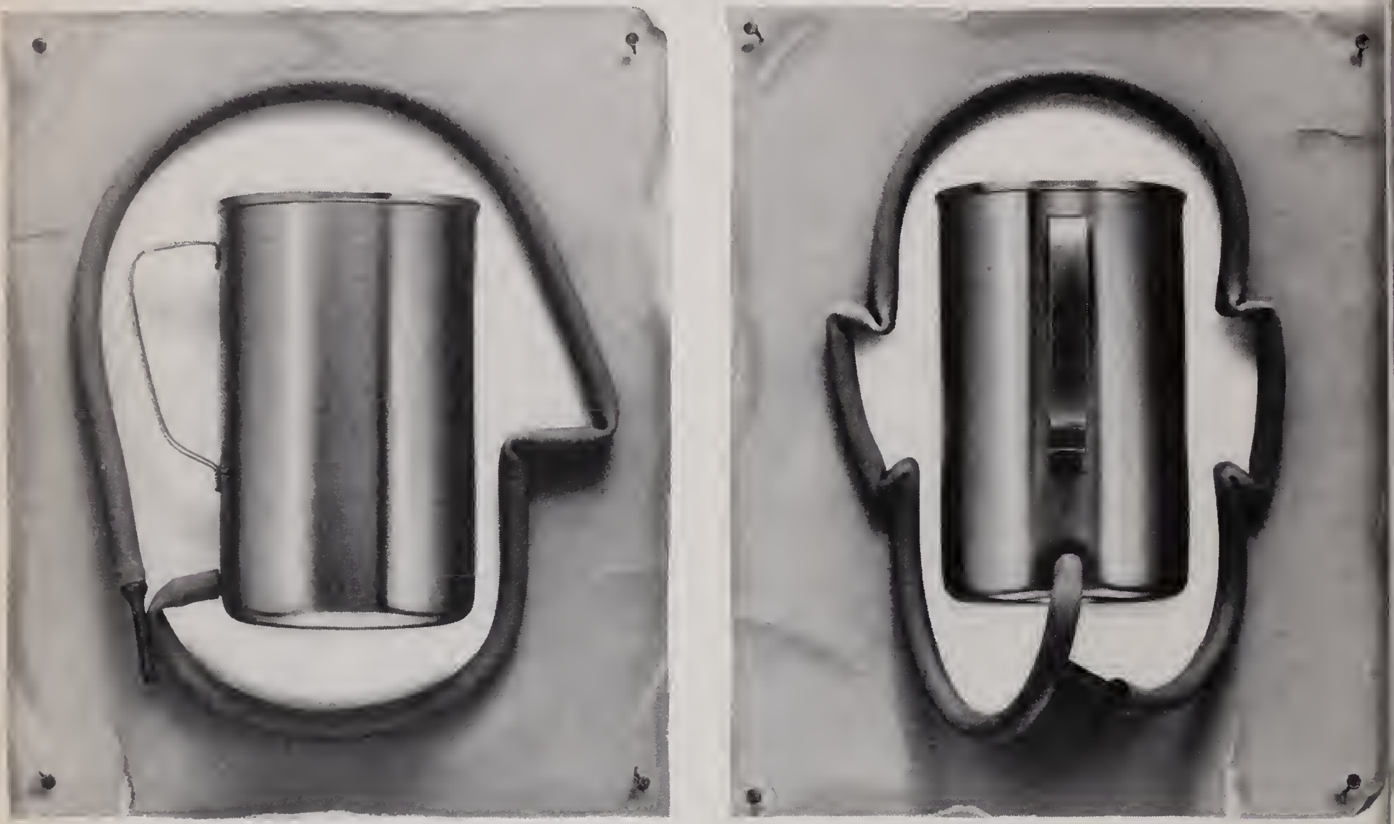

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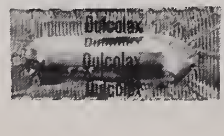

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Drug Therapy of Hypertension

Present Status and Recent Developments

DAVID HORWITZ, M.D.,* AND ALBERT SJOERDSMA, M.D., Ph.D.†

DRUG THERAPY OF HYPERTENSION is distinctive in that asymptomatic patients are treated for extended periods to prevent a future disaster which the physician predicts mainly from the findings of simple physical examinations. To justify this the physician must be able to evaluate the risks of the individual patient's disease and must weigh the possibilities of benefit with drugs against the inconvenience, expense, and possible side-effects of treatment; further, he must be able to select an optimal regimen from among the many single agents and combinations available. These considerations, in essence the strategy and tactics of antihypertensive therapy, will be discussed.

Justification for Treatment

The concept of hypertension arose from the finding that certain levels of blood pressure are associated with perceptibly increased risk of death and cardiovascular complications; at sustained diastolic levels of about 100 mm. Hg the curves of cumulative mortality with time turn appreciably upward and steeper slopes follow each successive increment of blood pressure.[1, 2] Presently available drugs permit us to reliably lower blood pressure in most patients and to test the hypothesis that blood pressure reduction can prevent the consequences of hypertension. The effectiveness of antihypertensive therapy in reducing mortality and morbidity has already been clearly shown among malignant hypertensives whose prospective duration of life can be prolonged by factors of 8 or more even with earlier modes of therapy.[3]

Among patients without accelerated hypertension it has been possible to demonstrate that blood-pressure control is associated with pronounced reduction in the incidence of congestive failure, cerebrovascular accidents, and progression to more severe disease. In the recent Veterans Administration Study of a group of males with diastolic blood pressure levels of 115 to 130 mm. Hg superiority of a simple treatment regimen over placebos was clearly demonstrable within a 2-year period; the 70 untreated subjects developed 27 severe complicating events including 4 deaths, whereas only 2 such events and no deaths occurred among 73 treated patients.[4]

The slower tempo of disease among mild hypertensives has so far made it difficult to demonstrate unequivocally the usefulness of blood pressure control, and thus the physician acts with less assurance in treating such patients. Nevertheless, it appears reasonable to treat all patients whose disease poses an appreciable threat and who achieve good control without difficulty.

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*Senior Investigator, Experimental Therapeutics Branch, National Heart Institute, National Institutes of Health, Bethesda, Md. 20014.

†Chief, Experimental Therapeutics Branch, National Heart Institute.

Selection of Patients

In deciding on therapy of individual patients the physician can be guided by a number of considerations. Emphasis is placed on diastolic blood-pressure levels, since these correlate better with the risks of hypertension. Since patients with intermittent hypertension show a mortality experience close to that of normotensive subjects, potential benefits of therapy are limited[2]; they should be followed, however, to detect those subjects who progress to a more threatening stage of their disease. Evidence of cardiac, retinal, cerebral or renal changes emphasizes the significance of associated hypertension, particularly when these are disproportionate to the patient's age. Since mortality rates among men climb faster than among women for comparable degrees of blood-pressure elevation, the urgency for treatment may be greater.[1, 2] The tempo of the patient's disease and his age should be considered; thus diastolic blood-pressure levels of 100 mm. Hg are unlikely to warrant aggressive therapy in a 75-year-old man, whereas such levels even though engendering a relatively slow acceleration of cardiovascular degeneration may be of significance in a 25-year-old man. Correctable causes of hypertension should be searched for; however, even in the presence of a primary cause such as a renovascular constrictive lesion the option of medical management should be weighed for those patients whose blood pressure is readily controllable with drugs, those in whom operative risks are disproportionate, and those with known advanced degenerative complications which limit the potential benefits of surgery.[5]

Treatment of Mild Hypertension

It has been common practice to treat mild hypertensives with a diuretic, usually chlorthalidone or a thiazide, to which either reserpine or hydralazine has been added. Table 1 is a partial list of generic and trade names of the antihypertensive agents referred to in this paper. Both reserpine and hydralazine have a major side-effect which limits their dosage. With the initial high doses in which reserpine and the other rauwolfia alkaloids were employed as many as 10 to 20 per cent of patients became depressed, a potentially lethal occurrence. This side-effect was remarkable in that 4 to 5 months were commonly required for its full development and 1 to 2 months for it to recede after therapy was stopped; at presently used oral doses of 0.5 mg. a day or less of reserpine, side-effects are uncommon. In the case of hydralazine, about 10 per cent of patients who received long-term high doses of the drug used in the past developed a reversible lupus-like disorder, but this side-effect has largely disappeared with the use of daily doses of 200 mg. or less. Hydralazine has the further side-effect of increasing heart rate and may exacerbate angina in predisposed subjects; use of hydralazine in combination with a sympatholytic antihypertensive agent such as reserpine or mecamylamine limits such increases in heart rate. With presently recommended dose schedules both reserpine and hydralazine yield best effects in combination with another drug. Reserpine because of its prolonged action is effectively administered once daily, whereas hydralazine should be given in 3 or 4 divided doses.

TABLE 1: Generic and Trade Names of Some Antihypertensive Agents

Generic Name	Trade Name
Reserpine	Eskaserp (Smith Kline & French), Rau-Sed (Squibb), Reserpoid (Upjohn), Serpasil (Ciba)
Hydralazine	Apresoline (Ciba)
Thiazides:	
Bendroflumethiazide	Naturetin (Squibb)
Benzthiazide	NaClex (Robins)
Chlorothiazide	Diuril (Merck)
Hydrochlorothiazide	Hydrodiuril (Merck), Esidrix (Ciba), Oretic (Abbott)
Hydroflumethiazide	Saluron (Bristol)
Methyclothiazide	Enduron (Abbott)
Polythiazide	Renese (Pfizer)
Trichlormethiazide	Naqua (Schering), Metahydrin (Lakeside)
Chlorthalidone	Hygroton (Geigy)
Quinethazone	Hydromox (Lederle)
Spironolactone	Aldactone-A (Searle)
Triamterene	Dyrenium (Smith Kline & French)
Ethacrynic acid	Edecrin (Merck)
Furosemide	Lasix (Hoechst)
Guanethidine	Ismelin (Ciba)
Methyldopa	Aldomet (Merck)
Pargyline	Eutonyl (Abbott)
Ganglion blockers:	
Mecamylamine	Inversine (Merck)
Pentolinium	Ansolysen (Wyeth)
Trimethaphan	Arfonad (Roche)
Diazoxide	Hyperstat (Schering) (unmarketed)

Treatment of Severe Hypertension

For patients not responding to milder regimens effective blood pressure reduction can usually be achieved with a potent sympathetic blocking agent, commonly in association with a diuretic. Such sympatholytic agents include guanethidine, methyldopa, pargyline, and the ganglion blockers. Since these drugs differ in their mechanisms, side-effects, and durations of action, an optimal regimen can be found for most patients. One factor in the initial choice of one of these drugs is its associated effects (table 2). Thus methyldopa would be selected when sedation is desirable, whereas pargyline is helpful for the depressed patient; guanethidine, which does not penetrate the central system, is free of psychic effects.

TABLE 2: Special Properties of Antihypertensive Agents

Psychic	
Sedative	*Stimulatory*
Reserpine Methyldopa	Pargyline
Bowel Motility	
Increased	*Decreased*
Guanethidine	Ganglion blockers: Mecamylamine Pentolinium

The presence of advanced renal insufficiency does not necessarily preclude effective blood-pressure control if the hypertension is thought to be sufficiently threatening; under such circumstances the limits of therapy are defined by serial tests of renal function as the blood pressure is reduced; diuretics should be used with special care in such patients, since they are particularly vulnerable to electrolyte depletion and attendant deterioration of renal function.

Properties of Individual Drugs

Diuretics. It has been possible to lower blood pressure with each of the known potent diuretics as well as with restriction of dietary salt and removal of salt during dialysis; effects on salt metabolism thus appear to be a fundamental even if not exclusive mechanism in the action of these diverse agents. Blood-pressure lowering by such agents as reserpine, methyldopa, guanethidine, ganglion blockers and catapres is commonly associated with some degree of salt retention and weight gain; this adaptive mechanism tends to inhibit blood-pressure reduction but it can usually be overcome by associated diuretic therapy. Because of this it has been common practice to employ a diuretic plus an associated drug. Table 3 shows some of the properties of available oral diuretics.

TABLE 3: Properties of Oral Diuretic Agents

Agent	Uric Acid	K	Glucose	Duration
Thiazide	↑	↓	↑	++
Chlorthalidone	↑	↓	↑	+++
Quinethazone	↑	↓	↑	++
Furosemide	↑	↓	↑	+
Ethacrynic acid	↑	↓	?	+
Triamterene	↑	↑	0	+++
Spironolactone	0	↑	0	+++

The thiazides and chlorthalidone are the most widely used of the diuretics because of their antihypertensive effectiveness, ready acceptance by patients, and narrow range of necessary doses. To a comparable degree they show 3 major side-effects: potassium depletion, urate retention, and reversible worsening of glucose tolerance. With the exception of patients receiving digitalis or showing the secondary aldosteronism of severe hypertension, potassium losses are not commonly of clinical importance; they can usually be managed by encouraging the use of potassium-rich foods such as bananas, dried fruits and juices or, if necessary, by using liquid potassium supplements, preferably as the chloride. The major practical distinction between chlorthalidone and the thiazides is that the former can be given once daily because of its longer duration of action, whereas the thiazides usually show optimal effectiveness in divided doses. Quinethazone appears indistinguishable from thiazides in its pharmacologic and clinical effects and differs structurally only in the substitution of a carbon for a sulfur atom.

Spironolactone is a steroid with ability to inhibit the salt-retaining and potassium-depleting effects of mineralocorticoids. It is of interest in that it has the ability to lower blood pressure in patients with essential hypertension who do not show increased production of aldosterone. It does not alter urate or glucose metabolism and may thus be substituted in patients who show adverse metabolic side-effects from thiazides or chlorthalidone; used in combination with thiazides it can potentiate antihypertensive effects while reversing potassium depletion. It is commonly effective at a daily dose of 100 mg. of the newer micronized preparation.

Triamterene is not an effective antihypertensive agent when used alone although it adds a small increment of effect when used with other agents; it is distinctive in that it promotes potassium retention and has been used mainly to offset the kaliuresis induced by thiazides or chlorthalidone. Both ethacrynic acid and furosemide have hypotensive effects, but neither is a preferred antihypertensive agent; ethacrynic acid has the disadvantage of inducing an appreciable incidence of nausea and vomiting and both have only brief durations of action.

Guanethidine. Guanethidine is a potent peripheral sympathetic blocking agent which is used for the treatment of moderate to severe hypertension.[6] Its action is prolonged with cumulation of effects for 5 to 7 days; increments of dose are thus best given at weekly intervals. There is a broad range of effective dosage extending from 5 mg. to over 400 mg. daily although dosage is not generally pursued beyond 200 mg.; with a usual starting dose of 10 mg. daily and subsequent increments of 20 to 30 per cent of the prevailing dose some patients require an extended period to achieve optimal control. The use of an oral diuretic enhances control, reducing the required dose.

The principal side-effects are diarrhea and interference with ejaculation. An additional problem in the use of guanethidine has been the great variability in blood pressure which some patients have shown. This has been of 2 types. Commonly there is pronounced early morning orthostatic hypotension followed by considerable increases in blood pressure later in the day; in addition, profound blood-pressure reduction occasionally occurs in association with vasodilatation of muscle beds during physical exertion. Because of the long duration of its effects guanethidine is given as a single daily dose, and diurnal variability cannot be influenced by changing the timing of administration.

To produce its effects guanethidine must itself be taken up and held by sympathetic nerves; this process is blocked by tricyclic antidepressant agents such as imipramine and by amphetamine. These drugs thus render guanethidine ineffective and should not be used concurrently.

Methyldopa. Methyldopa is a potent antihypertensive agent with associated sedative properties.[7] Its most useful role appears to be in the management of severe hypertension particularly when associated with appreciable renal impairment, but good results can also be obtained in milder cases. While perhaps not as reproducibly potent from patient to patient as guanethidine its smoothness of effect and broad acceptability to patients appear to offer advantages over the latter; its shorter duration of action makes it possible to avoid excessive early morning hypotension by omission of evening doses, and there appears to be a lesser preponderance of orthostatic effects. Its prudent use requires recognition of 2 uncommon and reversible side-effects, that of impairment of liver function and the appearance of Coombs'-positive hemolytic anemia; such liver function abnormalities occur early in therapy and can be detected by serum transaminase determinations during the first 3 months of treatment; positive Coombs' tests have been relatively common, occurring in as many as 20 per cent of subjects receiving prolonged high doses, but they are of consequence only in the rare subjects who show associated hemolytic phenomena.

Best results are obtained when methyldopa is administered in association with a diuretic. Routine therapy is usually started with 250 mg. given twice daily. Subsequent increments of doses may be given at intervals of 3 days or more, with most patients showing full effects at a dose of 2 Gm. or less.

Pargyline. Pargyline, a nonhydrazine monoamine oxidase inhibitor, is a potent antihypertensive agent. It penetrates the central nervous system where it induces mood-elevating effects which may be of special value in depressed patients. In other subjects, however, it is a drug of second choice, mainly because its use is complicated by incompatibility with certain foods and drugs. If it is to be employed safely, patients must avoid the concurrent use of amphetamine-like compounds, meperidine, tricyclic antidepressants such as imipramine, and cheese and broad beans. It is a long-acting compound which takes about a week to achieve full effects and a comparable period for their dissipation; for this reason it is not suitable for the treatment of patients in whom blood pressure control is pressing. Effective doses usually range from 50 to 100 mg. daily, but the dose may be reduced if a diuretic is used in conjunction with it.

Ganglion blockers. These potent agents inhibit transmission across ganglia by a mechanism which is common to both sympathetic and parasympathetic nerves. As a consequence it has not been possible to completely dissociate blood-pressure lowering from such side-effects as constipation, bladder dysfunction, and blurred vision. They are compatible with the other antihypertensive agents and because of their side-effects are usually used in reduced doses as adjuvants.

Mecamylamine is the most widely used of the ganglion blockers because of the advantage of complete absorption of oral doses and consequent greater reproducibility of effects. Occasionally its side-effects may be used to special advantage. Mecamylamine can be used to diminish the increased bowel motility seen in some patients receiving guanethidine; in addition, because of its rapid onset of effects it can be used in late morning and afternoon doses to reverse the afternoon rise in blood pressure commonly seen with the latter drug. Initial dosage of mecamylamine is 2.5 mg., and as much as 20 to 30 mg. a day can be tolerated by some patients without excessive side-effects.

Emergency Treatment of Hypertension

Table 4 shows the drugs commonly used for hypertensive emergencies. With these potent agents the physician must beware of too severe reduction of blood pressure because of the possibility of inducing renal damage. Diazoxide, although not yet available commercially, appears to be the drug of choice in that most patients respond, effects are immediate, and the moderate duration of action (8 to 16 hours) permits a transition to conventional agents. It is not suitable for prolonged use, however, because of its diabetogenic effects. A dose of 5 mg./Kg is commonly effective and may be given by infusion over 10 to 30 minutes; blood-pressure effects should be monitored so that the infusion can be terminated if effects occur with smaller amounts. Incremental dosage may be given if a prompt response is not obtained. Trimethaphan while highly effective and promptly acting suffers the disadvantage of a fleeting duration so that a continuous infusion with monitoring is required; nitroprusside is similar in characteristics but is not commercially available and must be prepared from reagent chemicals.

TABLE 4: Characteristics of Some Emergency Antihypertensive Agents

Drug	Time of Onset	Duration	Route of Administration
Diazoxide	Minutes	Hours	I.V.
Methyldopa	4–6 hours	Hours	I.V. or oral
Reserpine	2–3 hours	Prolonged	I.V.
Trimethaphan	Immediate	Minute	I.V.
Nitroprusside	Immediate	Minute	I.V.
Pentolinium	1–2 hours	Hours	I.V. or oral

Parenteral reserpine, commonly administered in a starting intramuscular dose of 2.5 mg., is a potent agent; it suffers the disadvantages of producing marked sedation, of having a prolonged duration, of requiring several hours for full effects, and of showing such variability from patient to patient that doses as small as 0.1 mg. have yielded excessive effects. It should be used with special caution in patients with recent cerebrovascular accidents.

Methyldopa is quite useful for treating hypertensive emergencies but suffers the disadvantage of requiring 6 to 8 hours to achieve full effects; this lag results because the drug must be converted to amine metabolites to be active; as a consequence the intravenous form offers little advantage over oral administration. A useful combination is the simultaneous administration of diazoxide and methyldopa with the 2 acting in sequence.

Parenteral pentolinium tartrate while potent suffers the disadvantage of a lag in the onset of effects, considerable variation in effective dose from patient to patient, and side-effects on bowel and bladder function. The initial dose is best limited to 2.5 mg. although single effective doses may be as high as 10 mg.

Blood-pressure Reduction and Angina Pectoris

In contrast to other circulatory beds, the coronary circulation may show an improved relationship between perfusion and metabolic demands when sympatholytic agents are used. This results because increases of systemic blood pressure and heart rate disproportionately increase oxygen consumption of the heart; in the presence of coronary stenosis, which limits maximum flow, reduction of rate and systemic pressure by these drugs can bring delivery and demand into balance. Thus, clinical improvement in angina pectoris has been reported in hypertensive patients under treatment with reserpine, ganglion blockers, guanethidine, methyldopa, and pargyline. As a consequence the presence of associated angina pectoris may represent an indication for rather than a deterrent to antihypertensive therapy, with the precaution that excessive and irregular blood-pressure reduction should be avoided. Further, some normotensive patients with angina pectoris show striking pressor responses to exercise and may be impressively improved by control of these with an agent such as pargyline.[9]

Newer Developments

It is evident from this discussion that development of antihypertensive agents has focused mainly on inhibition of sympathetic nerve function and on altering salt metabolism. Several new agents are worthy of discussion.

Bethanidine is a peripheral sympathetic blocker comparable in potency and properties to guanethidine but offering 2 advantages. It does not cause the diarrhea induced in some patients by guanethidine, and it has a shorter duration of action so that uneven effects during the course of a day can be compensated for by the spacing of doses. It has been tested extensively in patients without adverse effects and has been marketed abroad for several years.

Catapres, also marketed abroad, is the most potent available antihypertensive agent and is usually effective in daily doses of less than a milligram. Its effects are reminiscent of those of methyldopa in that it induces sedation and does not cause evident peripheral sympathetic blockade; it differs, however, in causing no alterations in tissue norepinephrine levels and in its ability to produce a component of direct alpha-adrenergic stimulation.

Alpha-methyl-para-tyrosine is the first effective inhibitor of norepinephrine synthesis available for use in man and has caused reductions in norepinephrine excretion of up to 70 per cent. Initial trials in patients were performed in this laboratory and revealed it to have relatively weak antihypertensive effectiveness, yielding evidence against overproduction of norepinephrine as a factor in essential hypertension. In patients with pheochromocytoma, however, it has proved to be a useful agent both in preparing patients for surgery and in controlling blood pressure and symptoms when surgery was not feasible.

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Rescue Techniques in Ice Accidents

Mr. Robert M. Oswald, National Director of the American Red Cross Safety Programs, describes the safest method of rescuing someone who has fallen through the ice:

1. Extend a line or a pole if the victim is near the shore. When he has grasped it securely, pull him to safety.

2. Do not stand up on the ice when executing a rescue.

3. If the victim cannot be reached from the shore, lie flat on the ice and extend a ladder, plank, or similar device. When he has grasped it, pull him to safety.

4. If no rescue equipment is at hand, several persons can form a human chain by lying flat on the ice, holding onto the ankles or skates of the person in front. They work their way toward the victim, the foremost man grasps the victim's wrist, and the whole line wriggles back to safety.

If you are alone and fall through the ice, don't try to climb out. Instead, extend both arms along the surface of the ice and kick vigorously. This will tend to raise the lower part of the body and help propel you onto solid ice. Then roll to safety.

Mr. Oswald also warned against the dangers of prolonged immersion in cold water. Even expert swimmers can drown if they stay in near-icy water long enough to lose the capacity to move their arms and legs.

"If an accident tumbles you into the cold waters of a lake or river, don't try to remove your clothing," he added. "The clothing will help you retain body heat and it can also hold and trap air which will add to your buoyancy. The important thing is to get out of the water as soon as possible."

Medullary Carcinoma of the Thyroid—A Review

JACOB ROBBINS, M.D.*

When a carcinoma arises in an endocrine organ one of its cardinal features may be the assumption of endocrine function. Furthermore, the functioning tumor frequently is well differentiated and usually shares the histologic appearance of the normal gland. In the case of the thyroid it has long been recognized that functioning tumors have a follicular pattern of growth, whereas papillary or solid tumors are ordinarily inactive with respect to hormone production. Function, in this sense, refers to the organification of iodine with formation of iodotyrosines and iodothyronines, a function which normally resides in the epithelial cells of the thyroid follicle.

In the past 7 years there has been a remarkable increase of knowledge concerning a second type of hormonal activity in the normal thyroid. Following the discovery of a serum calcium-lowering hormone, calcitonin[1] and its localization to the thyroid gland,[2] a previously unsuspected function has been found for the so-called parafollicular cell of the thyroid. This cell, which occurs in scattered groups or singly in many mammalian species,[3] appears to be the locus of calcitonin production.[3-6] In lower forms, e.g., chicken and dogfish,[7] calcitonin-producing cells are in the ultimobranchial body, a structure which is separate from the thyroid gland. The embryologic origin of these parafollicular cells thus appears to be the last branchial pouch.[3, 8] In man the presence of parafollicular cells has not yet been convincingly demonstrated, but it is well established that the human thyroid gland contains and secretes calcitonin.[2, 9, 10]

The discovery of this new hormone, together with other findings to be discussed later, gave rise to renewed interest in nonfollicular tumors of the thyroid gland. In fact, an unusual thyroid carcinoma had been formally recognized about 10 years ago by Hazard, Hawk and Crile.[11] The distinguishing feature of this tumor was its content of amyloid and its relatively benign course compared to other solid tumors of the thyroid. The term "medullary carcinoma" proposed by Hazard et al[11] has now been generally adopted, although it is recognized that these tumors are characteristically firm, rather than soft, as is the case with "medullary" tumors of other organs. There are now in the literature several reports representing an extensive experience with this tumor.[11-15] The disease is far from rare. Three of the reports summarized in table 1[12, 13, 15] include a total of 143 cases of medullary carcinoma out of 1,858 cases of all types of thyroid carcinoma. The 2 other series report 88 cases. The incidence ranged from 3.5 to 9.4 per cent of thyroid tumors and may well be of the order of 10 per cent.[14]

Medullary carcinoma is generally unifocal, although tumors in both thyroid lobes have been described.[15, 16] The tumor cells are relatively small and contain abundant cytoplasm. Electron microscopic studies have shown similarities between these tumor cells and thyroid parafollicular cells, as well as those in carcinoid tumors.[17, 18] A variety of patterns have been recognized, including irregular but contiguous collections of cells, alignment of cells in rows, called "palisading," and swirling patterns of spindle-shaped cells. Sometimes the tumors are mainly cellular, but an irregular fibrous stroma is more usual and may be so extensive as to leave the neoplastic cells in clusters or nests. In the latter, extensive collections of amyloid in the fibrous stroma may easily be recognized. In the more cellular tumors special stains such as Congo red, thioflavin T, and methyl violet may be required to identify the amyloid which is characteristic of these tumors. The important point is that the amyloid is found in the tumor, and not in organs as it is in amyloidosis. Very few epithelial tumors have this propensity for amyloid formation; some consider it unique for these thyroid tumors,[11] but it has also been noted in pancreatic islet-cell tumors.[19] The source of the amyloid may be the tumor cell itself.[17, 20] Calcification may also be present in these tumors, usually in microscopic foci but sometimes more extensively.

In some of its forms medullary thyroid carcinoma may closely resemble other tumors, in particular, carcinoid tumors, oat-cell carcinoma, islet-cell carcinoma, and carotid-body tumor. This has practical importance, not only with respect to function, as will be discussed, but also because medullary carcinoma may present as metastatic cervical lymph-node involvement, with a small primary tumor in the thyroid going unrecognized until it is specifically sought out.[16] Medullary carcinoma is not infrequently mistaken for papillary thyroid carcinoma because of a fixation artifact. When the tumor cells are in strands separated by fibrous stroma, shrinkage may cleave the strands, giving them a pseudopapillary appearance.[11, 14]

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*Chief, Clinical Endocrinology Branch, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Md. 20014.

The natural history of medullary thyroid carcinoma presents several significant features, which are summarized from several sources in table 1. There is no unique age incidence, although the median is in middle age and young children are rarely affected. Unlike other forms of thyroid cancer, relatively more males are affected. Cervical lymph-node metastases are common and extensive and appear early in the course of the disease. Distant metastases occur in liver, lung, bone, and adrenal glands. In contrast to other solid carcinomas of the thyroid, medullary carcinoma runs a protracted course, even after metastases have appeared.

TABLE 1: Analysis of Cases of Medullary Thyroid Carcinoma

Reference No.	No. Cases	Per cent of All Thyroid Carcinoma	Age at Diagnosis (yrs.) (median and range)	Ratio of Females to Males	Lymph-node Spread at First Operation (per cent of cases)	Survival	
						Years from Diagnosis to Death from Tumor (mean and range)	No. Patients Surviving 5 years Compared to Number with Adequate Follow-up
11	21	3.5	50 (33–66)	2	48	10 (0.3–27)	12/21
12	57	6.5	55 (14–74)	1.3	60	5.5 (0.5–20)	31/41
13	33	8.0	>40 (17–69)	3.8	70	—	21/33
14	67	—	45 (10–79)	1.3	67	4.1 (0.3–17)	16/33
15	53	9.4	48 (15–82)	1.1	64	∼6 (0.2–22)	18/33

Finally, the overriding interest of these tumors is in respect to 2 seemingly unrelated features: a tendency of some of them to occur in families together with other diseases, and the formation of secretory products leading to important clinical syndromes.

The significant coincidence of thyroid carcinoma and pheochromocytoma was recognized by Sipple.[21] Although he listed several types of thyroid carcinoma, since then a number of reports[16, 22-29] have appeared which make it clear that medullary carcinoma is the main, if not the only, type which follows this pattern. The pheochromocytoma is frequently bilateral and tends to occur in families with an autosomal dominant form of inheritance.[16, 29] It is in these families that the coincidence of the thyroid tumor with the adrenal tumor is most striking. Two recent reports[16, 29] describe and review 7 families, which together contain 24 individuals with pheochromocytoma and 18 individuals with medullary thyroid carcinoma. In 14 patients both were present. Williams and Pollock[30] pointed out the coëxistence in some of these patients of multiple mucosal neuromas, giving a rather distinctive "medullary carcinoma syndrome." At least 8 such cases have been reported.[31] Cutaneous neurofibromata also may occur.

In his pioneering studies on this syndrome Williams[32] also observed that many of the patients were afflicted by diarrhea, sometimes of severe degree. In one report[14] severe diarrhea was found in 14 out of 67 patients. The cause of the intestinal symptoms has not been firmly identified, but several pertinent observations have been made. Prostaglandins, fatty-acid derivatives with effects on smooth muscle, have been found in normal thyroid tissue and in considerable amount in medullary carcinoma.[33, 34] Whether or not these give rise to clinical symptoms is still uncertain. One patient had been found with elevated urinary and blood levels of 5-hydroxy-indoleacetic acid.[35] This is a metabolite of serotonin, the secretory product of carcinoid tumors which is at least in part responsible for the carcinoid syndrome. There have, indeed, been several cases of medullary carcinoma in whom the carcinoid syndrome has been found,[15, 35] but flushing does not appear to be a common feature of medullary carcinoma other than in relation to the concomitant occurrence of pheochromocytoma.

Several instances of Cushing's syndrome associated with medullary thyroid carcinoma, and apparently due to ACTH secretion by the thyroid tumor, have been reported.[36, 37] Thus medullary carcinoma may mimic the ACTH-secreting oat-cell tumor of the lung, with which it also shares certain histologic features.

The most distinctive of the secretory products of medullary carcinoma, however, appears to be calcitonin. As pointed out in the introduction, the discovery of this hormone in normal thyroid led to a search for clinical syndromes related to disease of calcitonin-secreting cells. This search has been rewarded by the discovery of several well-substantiated instances of overproduction of calcitonin by medullary carcinoma.[38, 39, 40] One patient had clinically significant hypocalcemia,[40] and all had calcium-lowering activity detected in the tumor by bio-assay. In one the hypocalcemia-producing activity had some of the chemical properties of calcitonin.[38] The relatively minor, or absent, symptoms suffered by most patients is undoubtedly due to compensatory oversecretion of parathyroid hormone. This is in keeping with the observed occurrence of parathyroid hyperplasia (or adenoma) in a significant number of patients with medullary carcinoma.[24, 25, 27, 28, 41] In one case elevated parathyroid hormone concentration in the blood was substantiated by immuno-assay.[40]

It is certainly not profound to remark that important clinical syndromes go unrecognized for years and yet, when once recognized, are found about us in profusion. We can expect in the near future a large number of reports on medullary carcinoma, which will make physicians generally aware of its existence. We can also expect elucidation of several items of interest to thyroidologists and others: clarification of the embryologic origin of the tumor and its relation to parafollicular thyroid cells, perhaps a subclassification of these parafollicular cells on the basis of their secretory products, and an orderly understanding of secretory tumors of various anatomic sites, especially those with a seemingly vicarious secretion of peptide hormones.[37]

We can end with several lessons already learned which have practical importance in clinical medicine. There exists a relatively common and easily recognized variety of solid carcinoma of the thyroid with a prognosis much better than that of other solid tumors of this organ. Some of these medullary thyroid carcinomas have a striking familial incidence and occur in families also subject to pheochromocytoma, multiple mucosal neuromas, and neurofibromatosis. Removal of thyroid nodules in members of such families may be life-saving. On the other hand, a high degree of suspicion in patients having medullary carcinoma may disclose the presence of a pheochromocytoma at an early stage and result in finding new cases in family members. An assortment of illnesses, including severe diarrhea, symptomatic hypocalcemia, carcinoid syndrome, and Cushing's syndrome may be controlled when it is recognized that they have their origin in medullary thyroid carcinoma.

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(Continued on page 26)

Leukocyte Kinetics in Man

SEYMOUR PERRY, M.D.*

THE STUDY of leukocyte kinetics in both man and animals has been an intriguing subject to many investigators, but it is only relatively recent that important progress has been made and data accumulated concerning the production, cell-cycle characteristics, movement, and fate of these cells. This laboratory has been primarily involved in studying cell dynamics in human leukemia and in elucidating the role of various organs, including spleen, liver, lymph nodes and marrow compartments, in the various categories of leukemia. We have been interested in defining the role of these various sites in the movement of cells into and out of the vascular tree.

In these studies we have utilized 3 radioisotopic labels:

1. Tritiated thymidine (H^3TdR). This has become the most important DNA label for the study of leukocyte dynamics. It was first used by Taylor, Woods and Hughes[1] in 1957 and to date has been exploited most extensively by the group at Brookhaven,[1, 2, 3] but a number of other investigators have also employed it to study human leukocyte kinetics.[4, 5, 6] In this laboratory both radioautography and liquid scintillation counting of the isolated peripheral blood leukocytes have been utilized. The radioisotope is administered only to individuals who are without reproductive capacity and with a limited life expectancy. Details of the techniques utilized have been described elsewhere.[4] Tritiated thymidine is a specific precursor for DNA and once incorporated into DNA is not exchangeable, hence it can be used to identify cells which were in DNA synthesis at the time of the administration of the label or their descendants.

2. P^{32}-diisopropylfluorophosphate (DFP^{32}). This is a label which forms an irreversible bond with a number of enzymes found in leukocytes. In the process of attachment DFP^{32} is converted to diisopropylphosphate and the fluoride ion is liberated as hydrogen fluoride. When the labeled protein is degraded, diisopropylphosphate is released and cannot be reutilized for labeling. DFP^{32} labels only granulocytes and does not label lymphocytes to any significant degree. However, since it does bind to erythrocytes and platelets care must be taken to isolate the leukocytes from these other cellular elements for final counting. This label has been most extensively utilized by the group at the University of Utah.[7]

3. Chromium^{51} (Cr^{51}). This labels all cells in the myeloid and lymphoid series, but the site of attachment in leukocytes has not been identified. Since it is a gamma emitter, surface scanning may be employed to monitor the distribution of leukocytes which are labeled in vitro and reinfused. It was first used as a leukocyte label in 1955,[8] but more than a decade elapsed before it was used again.[9]

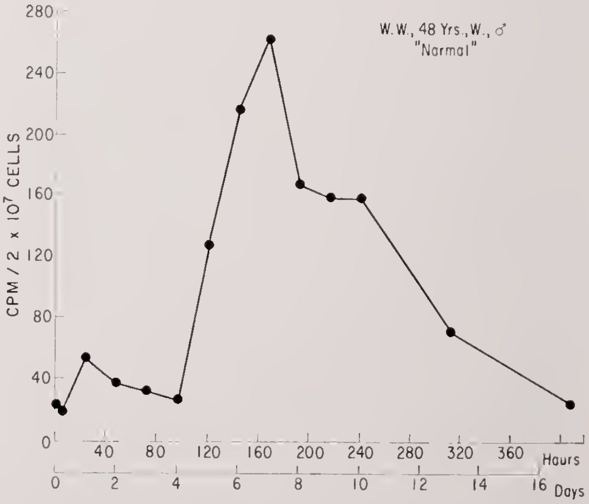

FIG. 1. Peripheral-blood-leukocyte kinetic pattern in a hematologically normal individual after intravenous administration of tritiated thymidine.

Following the administration of a pulse label of H^3TdR intravenously to a hematologically normal individual there is a relatively low level of leukocyte radioactivity to approximately the fourth day (figure 1). At this time there is a rapid rise in leukocyte specific activity which reaches a peak on the seventh or eighth day and then gradually declines with a "shoulder" present in most patients at the eighth to eleventh day.[10] Radioautographic analysis reveals that the early low level of leukocyte radioactivity is due to the appearance of labeled mononuclear cells, predominantly lymphocytes, in the peripheral blood. The major peak is comprised of labeled granulocytes with a labeling index of 30 to 60 per cent. The "shoulder" is probably due to a second division of myelocytes in the bone marrow and reflects their subsequent appearance in the peripheral blood. This pattern is quite similar to that which was first reported by Cronkite and his group[11] in 1959.

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*Associate Scientific Director for Clinical Trials, Chemotherapy, National Cancer Institute, National Institutes of Health, Bethesda, Md. 20014.

By body-surface monitoring of autologous normal leukocytes labeled with Cr^{51} there is no selective localization of leukocytes following infusion.[9]

Space does not permit further consideration of the kinetics of granulocytes in normal individuals, but suffice it to say that normally maturation progresses in an orderly fashion from the earliest precursor in the bone marrow, the myeloblast, through the promyelocyte, myelocyte, metamyelocyte, and finally to the segmented granulocyte, which after a relatively short delay is released into the peripheral blood. Following a brief period in the blood (T½, 6.6 hours)[12] granulocytes leave the vascular tree in a random fashion, and, once having left, these cells do not return. The abrupt rise in radioactivity 4 days after administration of the isotope defines the interval necessary for the most mature cell in the bone marrow still capable of DNA synthesis to incorporate the label, complete synthesis, divide, complete maturation, and enter the peripheral blood.

It can readily be calculated that in the average man the granulocyte entry into the blood approximates 8 by 10^7 cells per minute. The mechanism responsible for the release of granulocytes is carefully controlled but may be accelerated in a number of situations. The best example of early release is observed in severe bacterial infection,[13, 14] but it is also seen in leukemia[13, 15] and in response to bacterial endotoxin and etiocholanolone.[16, 17]

The kinetics of lymphocytes in man have not been studied extensively, but it has recently been shown that, as in animals, lymphocytes are capable of recirculating from the blood to the thoracic duct and back into the blood.[18] Following the administration of H^3TdR, well labeled large lymphocytes appear promptly in the thoracic duct along with some lightly labeled small lymphocytes. In fact, specific activity is higher in thoracic-duct lymphocytes compared to the peripheral blood leukocytes for the first 50 hours. It was clearly established with appropriate markers that intravenously infused lymphocytes appeared as early as the tenth hour in the thoracic duct and as early as 1 hour in the peripheral blood.

There have been a number of studies of leukocyte kinetics in patients with acute leukemia in relapse, but until recently there were no studies in patients with acute leukemia in remission. In 1961 Killmann et al[19] reported the first kinetic studies in patients with acute leukemia and blastic crisis using H^3TdR and radioautography. Since then there have been a number of studies published by the same technique in children with acute leukemia in relapse.

When a patient with untreated acute myelocytic leukemia (AML) is given H^3TdR and the appearance of leukocyte radioactivity determined at periodic intervals, there is an initial high uptake followed by a peak at 25 to 50 hours and secondary peaks at 65 to 120 hours (figure 2). The initial peaks are composed of labeled blast cells and the secondary peaks are predominantly due to labeled blast cells also along with small numbers of labeled neutrophils and lymphocytes. Blast-cell labeling indices are variable but usually do not exceed 10 per cent at the maximum.[15] Small numbers of labeled circulating blasts may be identified as long as 200 hours after the administration of the H^3TdR. It is possible that the interval between the 2 peaks observed in patients with AML in relapse (approximately 65 hours) may represent a blast-cell generation time.

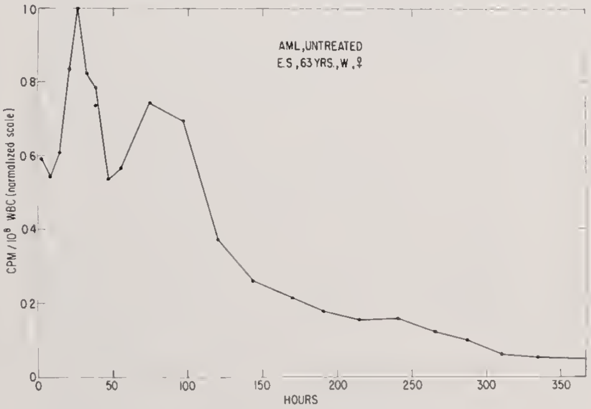

FIG. 2. Leukocyte kinetic curve in a patient with untreated acute myelocytic leukemia.

Since remissions in AML are infrequent there have been few opportunities to do extensive studies on these individuals. However, if such an individual is in a good clinical and hematologic remission, a completely normal pattern is observed.[15] Recent studies in this laboratory suggest that morphologically mature granulocytes in patients with acute myelocytic leukemia have a long T½ even in those who are presumably in complete remission. This is consistent with the observation by others[20] that mobilization of granulocytes in response to various stimuli is impaired in this disease.

In patients with blastic transformation of chronic myelocytic leukemia (CML) given H^3TdR there is an immediate high uptake of the label in peripheral blood leukocytes.[15] This probably is due to the incorporation of the isotope into circulating cells which are in the process of DNA synthesis. Subsequently there is an early peak of radioactivity at approximately 40 hours with a second peak occurring at approximately 100 hours post-H^3TdR. Again this interval may represent the generation time of the CML blast. However, it should be noted that this would be true only if the direction of release of cells into the blood from the bone marrow is unidirectional and if there were no significant contribution from other organs such as the spleen. Studies of this problem are currently under way. It is of some interest that the leukocyte-specific activity pattern in blastic crisis often resembles that observed in AML, which is consistent with the clinical impression that the blastic transformation of CML is similar to AML.

As in AML, there is a marked deviation from the normal pattern in patients with untreated acute lymphocytic leukemia (ALL) when these are studied with H^3TdR.[15] Leukocyte-specific radioactivity appears early with a maximum at 40 to 50 hours. The initial peak is followed by secondary peaks at 95 to 115 hours and is related to labeled blast cells with maximum labeling indices of approximately 5 per cent. The second peaks are also comprised of labeled blast cells along with neutrophils and lymphocytes. In contrast to the patients with the AML no labeled blasts are seen even when 2,000 cells are examined after 150 hours.[15] In this disease, as in AML, studies with DFP^{32} indicate that the granulocyte disappearance time is markedly prolonged both in relapse and in remission.

Patients with acute leukemia with proven tissue infiltrates but with morphologically normal bone marrows and peripheral blood may or may not have abnormal specific activity curves. In some of these individuals the abnormal patterns may be due to the very early appearance of labeled polymorphonuclear neutrophils. The early appearance of these neutrophils is quite unusual and there appears to be no explanation at present for the premature release of these morphologically normal cells. However, we have also observed a normal leukokinetic pattern in patients with biopsy-proven leukemic organ infiltrates.

In patients with CML the initial leukocyte-specific activity following H^3TdR is also high as in acute leukemia (figure 3). This initial high level of radioactivity is followed by 1 or 2 peaks within the next 2 days and by a major peak which appears on the fifth to the seventh day after administration of the isotope.[4] By radioautography the major portion of the radioactivity appears to be due to the presence of labeled myelocytes, particularly in the first peak. These early peaks have also been observed on radioautographic analysis by other investigators.[19]

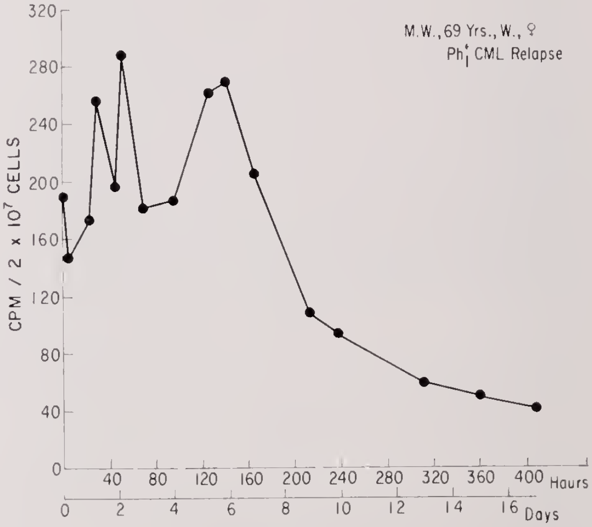

FIG. 3. Peripheral leukocyte-specific activity in an individual with chronic myelocytic leukemia in relapse.

The role of the spleen in leukemia has never been clearly defined, although splenomegaly is common in all of the various types of leukemia. Irradiation of this organ is of clinical therapeutic value in certain circumstances, but splenectomy has not been proven to be of benefit in the treatment of the basic disease. At the same time there has long been a clinical suspicion that this organ may be a site of production of leukemic cells. We have had the opportunity to study only 1 patient with CML before and after splenectomy, and the data obtained suggested that the spleen is an important contributor to the second major peak of radioactivity.[14]

It is well known that peripheral blood leukocytes from patients with CML are capable of repopulating the bone marrow of patients with drug-induced aplasia.[21] In addition, we have reported that autologous CML cells labeled with H^3TdR and reinfused may return to the bone marrow and also undergo maturation.[22]

In order to determine directly the distribution of Cr^{51}-labeled leukocytes in CML, body-surface scanning over various organs has been performed.[9] There was transient trapping of labeled leukocytes in the lungs in these individuals, but the most significant finding was that of pooling in the spleen (figure 4). The gamma emissions over this organ fluctuated, but there was a gradual decline in splenic activity with time as well as the release of radioactivity during the infusion of epinephrine. These observations are consistent with the hypothesis that leukemic leukocytes in this disease may leave the spleen once they are pooled there. The organ may be at least partly responsible for the markedly prolonged intravascular survival of myeloid cells in CML (mean T½, approximately 80 hours).

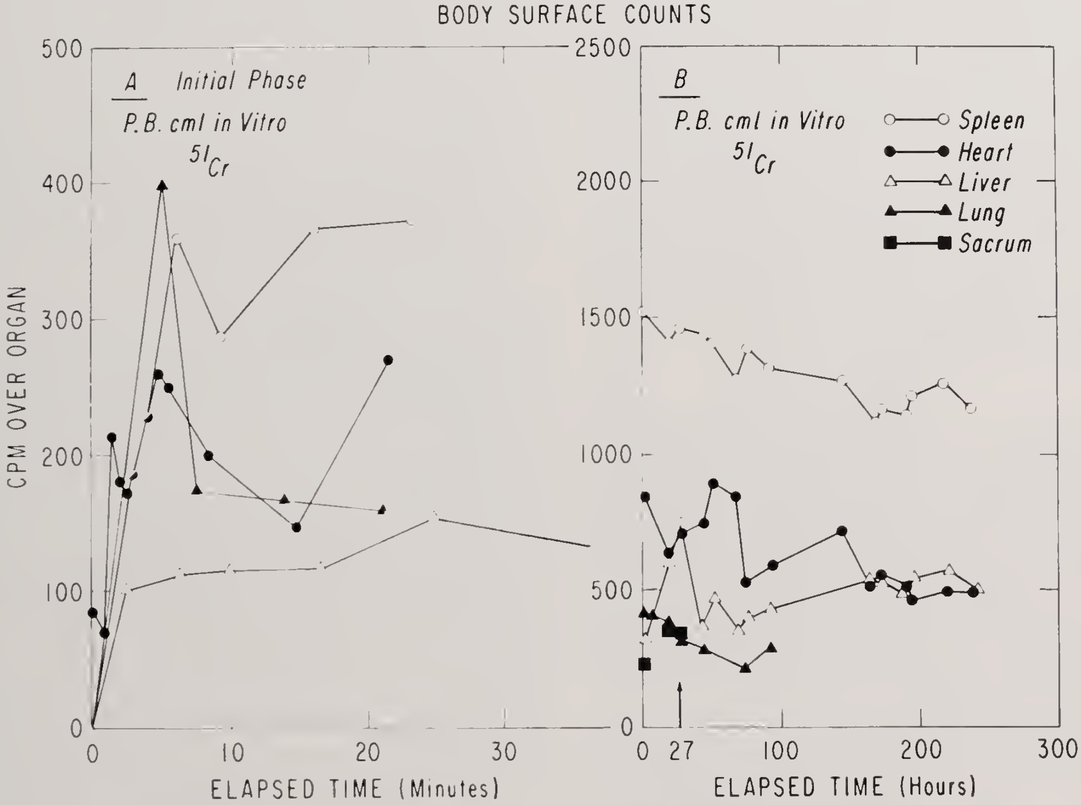

FIG. 4. Organ distribution of autologous leukocytes labeled in vitro with Cr^{51} in a patient with chronic myelocytic leukemia as detected by body-surface scanning.

Studies with H^3TdR in patients with chronic lymphocytic leukemia (CLL) revealed 2 types of leukokinetic patterns.[23] Patients with relatively low peripheral lymphocyte counts and without organomegaly demonstrate a peak of leukocyte-specific activity at varying times but generally between 100 and 250 hours post-H^3TdR. This is consistent with a small but definite influx of labeled lymphocytes in the peripheral blood, although much of the radioactivity at the peak is due to the presence of labeled neutrophils. In the second pattern, found in patients with significant organomegaly, there is a prolonged level of radioactivity with no significant peak at any time. In contrast to the lymphocyte-labeling index in hematologically normal patients (2 to 7 per cent) the labeling index in patients with pattern no. 1 is rarely above 1 per cent and in patients with pattern no. 2, usually below 0.1 per cent. These data suggest that there is a progressive, widespread accumulation of long-lived lymphocytes in CLL which often leads to splenic pooling and in some cases to hypersplenism. It also explains the beneficial results obtained with extracorporeal irradiation of the blood and splenic irradiation.

When autologous lymphocytes labeled with Cr^{51} are returned to patients with CLL there is rapid equilibration with the total blood-lymphocyte pool, and at 5 minutes approximately 40 per cent of the cells are still in the circulation. The disappearance pattern of the labeled cells thereafter is complex and generally demonstrates 2 components, both of which are exponential. The first component is relatively rapid with a T½ of approximately 4 hours; the second component is prolonged with an average T½ of 134 hours. Granulocyte disappearance, when studied with DFP^{32}, is dependent upon the presence of splenomegaly, and it appears that the spleen constitutes an extravascular pool for these cells from which they are able to return to the blood.[24]

Body-surface scanning, as in patients with CML in relapse, indicates a case of predominant localization of the labeled cells and spleen but with a recycling of these cells to and from this organ.

It appears from the studies reported here that in patients with both CML and CLL leukocytes are distributed in a multicompartmental system with flux in and out of the various compartments; this is not the case in the hematologically normal individual. The distribution of leukocytes in patients with acute leukemia and blastic transformation is unknown at present, but appropriate studies to define the role of different organs in these diseases are under way.

Summary

By utilizing several radioisotopic labeling techniques it has been established that in normal individuals there is an orderly progression of cells through the various precursor and maturation compartments in the bone marrow. They then enter the blood with maximum specific activity on the seventh or eighth day after administration of tritiated thymidine. The T½ of granulocytes in the blood is 6.6 hours.

In patients with leukemia there are many cells in the peripheral blood capable of incorporating tritiated thymidine, and release from the bone marrow is disorderly. In patients with acute myelocytic and acute lymphocytic leukemia in relapse abnormal patterns are obtained and the T½ is markedly prolonged. When these patients are put into remission, the patterns usually return to normal.

Finally, in patients with chronic myelocytic and chronic lymphocytic leukemia abnormal but distinctive patterns are also obtained. It has been clearly demonstrated in both diseases that cells may enter the spleen and recycle to the blood. This provides an explanation for the beneficial results obtained with certain forms of therapy such as splenic and extracorporeal blood irradiation.

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Clinical Testing of Gastric Secretion of Acid

CLAUDE V. PERRIER, M.D.*

THE PASSING OF A GASTRIC TUBE to perform one of the numerous tests of gastric function is a time-honored rite of gastroenterology. Advances in our knowledge of gastric secretion and its neurohormonal control have been considerable within the last 10 years and enable us to assess what is meaningful and which tests should be carried out during the procedure. A careful evaluation of indications and methods will drastically reduce the number of tests performed.[1]

Clinical Indications for Gastric Secretory Studies

The value of maximal stimulation tests can be considered as established in (1) the preoperative diagnosis of the Zollinger-Ellison ulcerogenic tumor syndrome, (2) the probability diagnosis of duodenal ulcer in X-ray negative dyspepsia, and (3) the probability diagnosis of recurrence after surgical treatment of duodenal ulcer. It is also the only way of making a positive diagnosis of "total anacidity." However, in this last situation the correlation between histology of the gastric mucosa, especially the picture of total atrophy, and the reduction of maximal acid output is such that gastric biopsy is the procedure of choice in many cases since it is shorter.[2] Of unestablished value is the study of gastric acid secretion in other types of gastrointestinal pathology, and this indication should be reserved for research projects. The test is of circumstantial value at best in the major hurdle of gastric diagnosis, the differentiation between ulcer and carcinoma. Indeed, only 1 in 5 patients with carcinoma has significantly lowered acid output.

For ease of performance, single injection tests should be chosen. For quantitative physiologic research, especially on the action of multiple agents, continuous infusion tests are preferable. As regards the choice of a secretagogue for maximal stimulation, 3 are currently in use: histamine, betazole and pentagastrin. Histamine and betazole are comparable in action and generally available, whereas pentagastrin, which has fewer side-effects and is possibly a more "physiologic" stimulant, is still an investigational drug. Maximal output tests are a means of determining the parietal cell mass,[3, 4] that is, the number of functional parietal cells. After a single maximal dose of histamine, 50×10^6 cells are needed to produce 1 mEq. of HCl in 1 hour. The term "maximal" is used for convenience and refers to the highest level of acid production elicited under the particular conditions of the test considered.

The indication for insulin stimulation is the testing of completeness of vagotomy after surgery. The value of this test for investigating the extent of selective or incomplete vagotomy is still insufficiently established.[5, 6, 7]

It is always a problem to determine acid output in patients with anatomic abnormalities that interfere with performance of the usual tests. These include oro-esophageal anomalies or, more frequently, the postsurgical stomach. If determination of gastric secretion should be of critical importance in such a case, one might refer to Rune's interesting technique[8] for indirect testing by measurement of the "alkaline tide" in arterial blood after the administration of a standard gastric stimulant. This method, however, is still in the investigational stage.

Obviously, the value of a test depends on the ability of the tester. He should be experienced and meticulous; otherwise, performance of the gastric secretory study is a needless imposition on the patient. For this reason the procedures will be described in some detail.

Equipment and Materials

Nasogastric tubes must be radio-opaque.† One should use the largest tube that the patient will tolerate (French 12–16). The Sheridan-Salem Wangensteen type sump tube presents the advantages of being disposable and plastic, and the incorporated air pipe permits injection of air without disconnection of the suction apparatus. How-

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*Privat-Docent, University of Geneva, Switzerland; currently guest worker, Section on Gastroenterology, Metabolic Diseases Branch, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Md. 20014.

†Improved Levin, X-ray opaque, Davol Rubber Co., No. 551-3.

ever, this tube is more difficult to locate fluoroscopically. For aspiration of gastric juice cyclic intermittent suction is necessary. The pump must produce a peak vacuum of −50 mm./Hg. Syringes with conical tips are used to clear the gastric tube. For infusion tests a constant infusion pump is necessary. An emergency tray must be available with a pressor amine such as metaraminol with epinephrine, hydrocortisone hemisuccinate, and parenteral antihistaminic. For the performance of the insulin test one should have 40 per cent glucose on hand.

The collected juice is filtered through glass wool and its volume measured to the nearest 0.5 ml. Aliquots should be titrated with 0.1 N NaOH to pH 7.0 or 7.4 by pH meter, automatic titrator, or to phenolphthalein end-point (pH 6.8–8.4). Several methods have been used to measure pepsin activity, but the clinical significance of this determination has yet to be evaluated.

Procedure, General Steps

The patient is fasted from 8:00 p.m. the previous night. No medication (especially anticholinergics) is given during this period other than a sedative if necessary. The test is best performed in the morning with the patient in his bed. The stomach is intubated through the right nostril to 58 cm. No local anesthesia is usually necessary, but the use of an anesthetic lubricant, if desirable, does not influence results. The position of the tube is then checked by fluoroscopy. The tip of the tube must project immediately to the left of the vertebral bodies, at the lowest point attainable without coiling. Excess slack should not be left. It has been shown that without fluoroscopic localization, positioning is wrong in more than 50 per cent of tests,[9] and that the tube may be found in high fundus, duodenum, esophagus, or even right-stem bronchus. The tube is taped to the upper lip. It is useful to put a marker 10 cm. from nostril to monitor additional displacement. The patient is positioned comfortably on his left side and instructed either to spit out all saliva or to use a dental suction device.

The stomach is thoroughly emptied by syringe aspiration followed by injection of 5 to 10 ml. of air and aspiration repeated. The patient is then asked to rotate through 4 quadrants, and the aspiration is repeated in each position. The pooled specimen constitutes the "fasting" sample. This entire procedure is repeated at the conclusion of each collection period. In addition, during a collection period the gastric tube is cleared at 3-minute intervals by injection of air and syringe aspiration. This is needed despite the use of the intermittent suction pump in order to avoid obstruction of the tube by mucus plugs, occlusion of the holes by gastric mucosa, or loss of juice by pooling in the stomach. If such care is exercised, recovery of gastric contents, as measured by use of polyethylene glycol, is approximately 90 per cent.[10]

Specific Protocols for the Different Tests

Single injection pentagastrin test (*maximal stimulation*).[11] Pentagastrin is available from Imperial Chemical Industries Limited, Great Britain, as I.C.I. 50,123 in 100 and 250 mg. ampules. The "fasting" specimen is collected, its volume is determined, and it is discarded. Titration of this sample is useless because it is a mixture of swallowed saliva, gastric secretion, and, occasionally, regurgitated duodenal contents. The gastric juice produced during the next hour is collected either as a single specimen or as 4 15-minute specimens. This constitutes the "1-hour morning basal secretion." Then pentagastrin is injected in a dose of 6 μg./Kg of body weight dissolved in no more than 3 ml. of sterile isotonic saline solution. This is usually given subcutaneously, but it has been administered intramuscularly to produce an earlier peak response and thus allow conclusion of the test after 30 minutes.[12] Gastric juice is then collected for 3 15-minute periods.

Pentagastrin infusion test.[13, 14] All steps before the injection, up to and including the collection of the 1-hour morning basal secretion, are the same as in test 1. Then pentagastrin, dissolved in a suitable volume of isotonic saline, is infused at a dose of 6 μg./Kg body weight/hour and collections made for 4 15-minute periods.

Single injection histamine test (*Kay's augmented histamine test*).[9, 15] The procedure is taken up to the start of the collection of the 1-hour morning basal secretion. At the end of 30 minutes of the morning basal collection 20 mg. of chlorpheniramine maleate or an equivalent dose of another antihistaminic is injected intramuscularly. At 60 minutes, when the action of the antihistaminic is well established, one injects histamine acid phosphate, 0.04 mg./Kg (= 0.014 histamine base) subcutaneously. We use 1 ml. ampules of a specially prepared solution containing histamine acid phosphate, 4 mg./ml., and benzyl alcohol, 20 mg./ml.[16] The benzyl alcohol suppresses the sting produced by injecting histamine subcutaneously.

The solution is injected from a tuberculin syringe in a dose of 10 μl./Kg body weight. The gastric juice is collected in 4 15-minute fractions.

Histamine infusion test.[17] Histamine acid phosphate without benzyl alcohol is used in the infusion solution. During basal collection the intravenous infusion is started with isotonic saline solution (scalp-vein pediatric perfusion set). After 30 minutes of basal collection 10–20 mg. of chlorpheniramine is given intramuscularly. An intravenous antihistaminic can also be given. At the conclusion of the collection of the 1-hour morning basal secretion the intravenous infusion is set to deliver 0.04 mg. histamine acid phosphate/Kg body weight/hour. A peak level of stimulation, indicated by the achievement of a relatively constant rate of flow of gastric juice, should be reached by the third or fourth 15-minute period and then maintained. Marked variation in flow rate denotes faulty, incomplete aspiration. One then collects 6 15-minute fractions in all.

Betazole single-injection test.[18, 19, 20] The histamine isomer, betazole hydrochloride, is marketed as Histalog® Lilly in ampules containing 50 mg. in 1 ml. It is as efficient as histamine but does not produce such dramatic vasomotor effects and therefore obviates the need for prior injection of an antihistaminic, an advantage in the ambulatory patient, where drowsiness is undesirable. The dose is 2.0 mg./Kg body weight subcutaneously. Six to 8 15-minute fractions are collected after the 1-hour basal secretion. The peak response appears later than that produced by histamine, and the effect is more prolonged.

Insulin test.[5, 6, 7, 21] The test is taken up to the basal 1-hour collection if so desired. Since it is frequently used in patients with resected stomachs, collection is rarely complete, and care should be taken to locate the tip of the tube in the efferent intestinal loop. After taking blood for determination of fasting blood glucose, one injects 0.15 units/Kg body weight of crystalline insulin intravenously and collects 8 15-minute periods. The concentration of blood glucose is determined at 30 and 60 minutes after injection.

Medical vagotomy. The indications for this test are still mainly investigational. The procedure is taken up to the basal 1-hour collection, at the end of which 0.4 mg. of atropine sulfate is injected subcutaneously and 50 mg. of hexamethonium intramuscularly. Then one proceeds as for the pentagastrin or the histamine single-injection tests. This procedure could be superimposed on continuous stimulation with more interesting results.

Side-effects

To antihistaminics, collapse has been described. It responds well to pressor amines. To histamine, even under the protection of antihistaminics, headache and flush are the rule. Circulatory collapse has been described occasionally. We have had no such incident in approximately 200 patients tested between the ages of 17 and 75 years. Minimal gastric hemorrhage occurs on rare occasions, as evidenced by aspiration of bloody fluid, and has been observed by gastroscopy. To betazole the vasomotor response is minimal but still apparent in approximately 40 per cent of cases, and collapse has also been reported. To pentagastrin, lightheadedness, nausea, or hypotension are noted in approximately 40 per cent of cases, especially if the dose of the intravenous infusion is changed for investigational purposes. These effects are less marked with subcutaneous than with intravenous administration and less severe than those caused by histamine. Insulin is potentially the most dangerous drug used in gastric testing. The effects are those of hypoglycemia, and the sweating and malaise can be quite striking. So far we have not observed side-effects severe enough to necessitate discontinuation of the test. However, all forms of gastric testing require skill and motivation in the performance and adequate medical observation of the patient. For these and other technical reasons it is only in the exceptional case that an outstanding nurse or technician can be singled out to perform all tests and that partial responsibility for their performance can be delegated.

Calculation and Expression of Results

Uniformity in expression of results is slowly gaining ground and would be of advantage in comparing results from different laboratories. The terms "free" and "total acidity" are archaic and irrelevant. The value for mEq. of NaOH required to titrate the gastric juice is referred to as titratable acid. The volume of a sample multiplied by its titratable acid per unit volume gives the quantity or output of acid for that sample. The following expressions, in mEq. of HCl, are used to describe results[9, 22]:

MBAO: "Morning Basal Acid Output" is the nonstimulated output during 1 hour. Its statistical value is equal to that of a 12-hour nocturnal aspiration, so that the shorter test should supersede the longer one.

MAO: "Maximal Acid Output" refers originally to the number of mEq. of acid produced during 1 hour after subcutaneous histamine stimulation.

It is the most widely used measurement of gastric-acid output. If used to designate the response to another stimulant, this should be stated.

PAO: "Peak Acid Output" is defined as the sum of outputs of whichever 2 15-minute fractions show the highest value, multiplied by 2 to give figures directly comparable to the results of the classical Kay augmented histamine test. For most authors this also happens to be the most reproducible value.

TABLE 1: Results of Single-injection Maximal Histamine Stimulation in Some Human Series: Normal Subjects

References	Sex	MBAO			MAO			PAO		
		No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
			mEq.			*mEq.*			*mEq.*	
Baron[24]	M	20	1.30	1.59	19	17.10	11.94	20	21.60	3.79
	F	20	1.10	1.75	19	9.40	7.20	20	12.30	8.95
Marks[25]	M	35	4.20		35	22.60				
	F	26	1.80		26	15.20				
Perrier[26]	M	21	2.48	1.78	21	19.14	7.65	21	24.27	8.20
	F	18	1.76	1.42	18	14.41	5.87	18	18.55	7.19

Reproducibility

Reproducibility of the results of single-injection histamine testing is of the order of 9 per cent (s/m × 100). Johnston and Jepson[12] found the reproducibility of the pentagastrin single-injection test to be slightly better than that of histamine, 7.5 versus 9.1 per cent. The PAO after pentagastrin is comparable to that produced by subcutaneous histamine. The pentagastrin infusion gives results comparable to those of intravenous histamine. The reproducibility of the insulin test is of the order of 16 per cent.

Interpretation

Sufficiently abundant and varied data are available only for the subcutaneous single-injection histamine test. However, the results obtained by various methods correlate with each other. For a given stimulant there is an especially good correlation between the responses to single injections and infusions. Makhlouf[23] has shown that conclusions about the physiologic maximal secretory capacity of the stomach can be theoretically computed from the subcutaneous or intravenous use of any of the described stimulants.

The data in tables 1 and 2 give an indication of the order of magnitude of results obtained with a single injection of histamine in 3 studies. MAO in response to betazole tends to be in the order of 15 per cent higher than that elicited by histamine in single injection. The large variance and the overlap of results for the 2 groups (normals and patients with duodenal ulcer) are apparent and illustrate the major difficulty in interpreting individual results. Despite this difficulty with individual subjects the results fall into 3 distinct categories. Duodenal ulcer is characterized by a high output, chronic gastritis by a low output, and atrophic gastritis by total anacidity. In total anacidity, by definition the pH of gastric juice obtained after stimulation never falls below 7.0. In gastric ulcer there tends to be a low output; the higher along the lesser curvature the ulcer is situated the lower the output.

The following conclusions can be drawn from the study of an individual patient. If a male has an MAO higher than 35 mEq. he has approximately 97 per cent chance of having duodenal ulcer.[24] If his MAO is less than 16 mEq. duodenal ulcer is highly unlikely. Corresponding values for females are not well established but will necessarily be lower. A ratio of MBAO/MAO greater than 0.5 to 0.6 is generally regarded as pathognomonic of the Zollinger-Ellison syndrome. However, for unexplained reasons we have found that a patient with uncomplicated duodenal ulcer may exhibit a ratio of 0.6 during his first study but will exhibit a ratio as low as 0.3 on repeated testing. Therefore it is important to repeat a test several times before making the diagnosis of Zollinger-Ellison syndrome on the basis of the gastric secretory test. It is also possible to observe a low ratio in the study of a patient with the Zollinger-Ellison syndrome because of the cyclic variation in basal output that occurs in this condition. It is clear, however, that an MBAO greater than 20 mEq. is highly suggestive of the diagnosis and indicates the need for determination of gastrin activity in blood or urine.

In the study of a patient with a resected stomach an MAO greater than 15 mEq. is highly suggestive of an anastomotic ulcer.[27]

An insulin test is valid only if the blood-sugar concentration falls to 50 mg./100 ml. but preferably no lower than 35–40 mg./100 ml. One fraction should have a titratable acid of at least 20 mEq./l higher than that of the sample obtained before the insulin injection. Values for acid output in response to insulin have been determined for normal young men,[7] and it has been found that the acid output during the first 30 minutes after insulin injection, multiplied by 2, bears a rough correlation to the MAO produced by subcutaneously administered histamine. When additional data become available they should enhance the quantitative value of the insulin test.

TABLE 2: Results of Single-injection Maximal Histamine Stimulation in Some Human Series: Duodenal Ulcer Patients

References	Sex	MBAO			MAO			PAO		
		No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
			mEq.			*mEq.*			*mEq.*	
Baron[24]	M	50	3.60	3.70	50	34.20	11.70	50	42.00	13.13
	F	20	2.20	1.78	20	25.60	11.79	20	32.00	13.20
Marks[25]	M	115	7.90	5.90	115	36.70	12.80			
	F	29	4.10	2.41	29	23.60	7.47			
Perrier[26]	M	55	6.13	7.04	55	30.80	11.36	55	36.82	12.83
	F	14	3.05	2.06	14	20.16	11.06	14	25.20	12.26

Summary

Details of various tests of gastric secretory function have been described. The indications for performance of the tests have been defined. In the appropriate patient a test of gastric secretory function will be clinically useful. However, to be valid, the test must be performed according to strict rules by an experienced individual, and the results must be expressed according to the usage described.

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Cholera: A New Look at an Old Plague

ROBERT S. GORDON, JR., M.D.*

The only city in the United States to report the occurrence of clinical cholera within the past half-century has been Washington, D. C.[1] The development of active infections in 2 laboratory workers who had been handling virulent organisms was, of course, an unusual accident, but it does give evidence of the increasing interest in studies on cholera that currently prevails in many major medical research centers. One would have been more likely to predict that the first case seen in this country in the mid-twentieth century would have developed in a traveler who had recently returned from a cholera-endemic area at jet speed. Travel, actual or proposed, undoubtedly gives rise to almost all the questions about cholera for which Washingtonians consult their physicians or health officers.

The history of cholera makes fascinating reading, since this was the first epidemic disease of man for which a microörganism could be proved responsible. Even before Koch discovered the "comma bacillus" the classic epidemiologic observations of John Snow[2] had been published and had shown the need for public concern with sanitation and the supply of pure drinking water. The impetus for the establishment of governmental departments of sanitation and public health can be traced in large part to the cholera pandemics of the nineteenth century.[3] As a result of the successful introduction of public sanitation in western Europe and America, cholera disappeared from these regions by about 1900 and has been little heard of since. Even in the less developed, densely populated portions of Asia the disease appeared to be on the decline until 1958, when once again it began to spread. The term "current pandemic" has been used repeatedly to refer to the fact that since 1958 cholera has been reported from almost every country from Lebanon on the west to Japan on the east. This geographic spread, combined with increasing awareness of and concern with the needs of these Asian countries, has led to a new interest in research on cholera among scientists in Europe and in the United States and to many rapid advances in the' understanding of a disease which had received relatively little scientific attention since 1900.

From the clinical point of view cholera is much like other acute diarrheal diseases, especially those seen in very young children; virtually the sole cause of morbidity and mortality is derangement of body-fluid volume and chemistry resulting from loss of water and electrolytes in the stool. Individual cases may vary widely in severity, ranging from insignificant looseness of the stool to a fulminant "classical" attack. The astonishing feature of the disease is the rapidity with which total prostration and shock can develop in a previously healthy adult. As little as 6 hours may suffice to bring a once asymptomatic individual to death's door, although it is much more common to find that symptoms begin 12 to 24 hours earlier. Fluid losses occur both by rectum and by vomiting, and the material which is passed by either route is similar in character. Not at all fecal in nature after the purging is well under way, the liquid stool in severe cholera is colorless to slightly yellow, turbid but not opaque, and has a mild, hardly offensive, fishy odor. Chemical analysis reveals this fluid to be isotonic and to contain on the average about 140 mEq. sodium, 10 mEq. potassium, 40 mEq. bicarbonate, and 110 mEq. chloride per liter.[4] There are no detectable blood cells or plasma proteins in the stool, sharply distinguishing cholera from such acute inflammatory diseases of the gut as shigellosis.

Although the patient with acute cholera may be gravely ill he does not show the signs or symptoms classically associated with bacterial infections. Fever is rare; the moderate leukocytosis is not more than would be expected on the basis of dehydration alone, and as soon as rehydration has been successfully accomplished there is little if any malaise or pain. These clinical observations are entirely consistent with evidence, derived from experimental as well as autopsy studies, indicating that the cholera vibrio does not invade tissue but resides on the luminal surface of the intestinal mucosa and in the secreted fluids.

Differentiation of cholera from other diarrheal diseases is not a problem for the bedside. Whether or not the clinical picture is caused by infection with *Vibrio cholerae*, the emergent treatment of life-threatening dehydration is intravenous infusion of suitable electrolyte solutions. The etiologic diagnosis may be made by the isolation of the causative organism from stools or vomitus or by the demonstration of a significant rise in the titer of circulating antibodies directed against the specific antigens of the cholera vibrio. If one is ever confronted with the question of identifying an attack of diarrhea as cholera or noncholera diarrhea, he should know that the suspicion of cholera must be communicated to the bacteriologist. The culture media in common use for the identification of enteric pathogens are not suitable for the isolation of *V. cholerae*, and the organism will probably be missed unless the initial specimen is planted on media much less selective than the usual "enteric media." The same principle holds, of course, for serologic studies. The antigens usually used in "enteric agglutination studies" do not include preparations made from *V. cholerae*, and special antigens would have to be procured by the serologist in order to check on the possibility that diarrhea in a person who has just returned from Asia might be cholera.

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*Clinical Director, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Md. 20014.

Once a dreaded and highly fatal disease, cholera in even its most severe form can now be regularly cured if the required materials and manpower are at hand. Acute cholera is as much a medical emergency as is diabetic coma, and the response to competent treatment is even more rapid and dramatic. There should be no difficulty in handling a case in any hospital in the United States, provided that those responsible for the care of the patient could adjust to the rapidity of events in cholera and did not hesitate to administer quantities of intravenous fluid much greater than any they had used before.

As a rule of thumb, the acute cholera patient who has reached the stage of shock or collapse requires the immediate replacement, by the intravenous route, of isotonic fluid equal to 10 per cent of his body weight.[5] (This figure, which has been derived in studies on Asians of slight stature and lean body build, would probably prove to be excessive if applied to a series of Americans.) The quantity of fluid to be given in emergency rehydration may be gauged by clinical and hemodynamic response alone[6] or by laboratory criteria of hemoconcentration. In particular, the determination of plasma protein concentration has been found to be a useful guide in planning and in following intravenous fluid requirements.[4] The chemical composition of the fluid to be given requires some attention. In addition to isotonic dehydration one is dealing with a metabolic acidosis as a result of the large amount of sodium bicarbonate lost in the stool. Although many recommendations have been put forward regarding the ideal single solution for intravenous replacement therapy in cholera epidemics, it is unlikely that the hypothetical physician dealing with a case in a person who had just returned to Washington from Southeast Asia would find any but the standard U.S.P. formulations at hand. Of these, the most convenient and suitable choice would be a mixture (or the alternate infusion) of 2 volumes of isotonic saline solution and 1 volume of isotonic sodium bicarbonate or a bicarbonate precursor such as 0.16 molar sodium lactate solution.[7] As in the treatment of diabetic acidosis there is a requirement for potassium repletion, and up to 10 mEq. per liter of potassium may be safely added to intravenous fluids used for maintenance. Once brought under control, however, the usual cholera patient is quickly able to take fluids and food by mouth, and sufficient potassium can usually be given by this route.

Once a normal state of rehydration has been reëstablished, further intravenous replacement will be required for a minimum of a day or 2 before the average cholera patient can achieve a suitable fluid and electrolyte balance orally. Recent studies on the efficacy of intestinal lavage with glucose-containing solutions[8, 9] suggest that such measures may become practically useful in the villages of Asia, but such procedures are unlikely to be needed elsewhere. In guiding post-admission maintenance fluid therapy for a cholera patient the physician must have accurate knowledge of the balance of intake and output, which requires quantitative collection and measuring of stools. He must also be aware of the rapidity with which dehydration may recur if intake is allowed to fall behind output.

Although almost 100 per cent of patients whose cholera is treated by fluid replacement alone will survive the disease, in some individuals voluminous diarrhea will continue for up ty a week. Total fluid requirements may be staggering (note the extraordinary picture in reference 4 showing a convalescent cholera patient almost lost amidst a pile of empty I.V. bottles). This course may be greatly shortened by antibacterial therapy, for which tetracycline remains the drug of choice. One gram per day, given by mouth in divided doses of 250 mg. every 6 hours, is adequate to control diarrhea within 2 days in almost every case and to bring about a negative stool culture 1 or 2 days later.[10] Other antibiotics, especially chloramphenicol, have been found effective, but none has been demonstrably superior. Drug-resistant strains of *V. cholerae* can be produced in the laboratory, but fortunately none has so far been encountered in the field as the causative agent in human disease.

Although the spread of cholera can be prevented by adequate sanitation and individual cases can be successfully treated as they arise, the disease remains uncontrolled in large areas of Asia where population density is high and standards of living are low. The economic situation of such areas makes it unlikely that cholera will be eradicated in the near future, since the cost of the sanitary facilities that would be required is beyond the reach of the population. Thus a real need for prophylactic immunization exists, not only to protect outsiders who must enter such areas, but to reduce in so far as possible the disease incidence in the indigenous population. Although cholera vaccine (a suspension of killed whole cells of *V. cholerae*) was introduced into common use in the nineteenth century,[11] scientifically rigorous evaluation of protective power did not come until the last few years,[12, 13] and many questions are still unanswered. It is now clear that the vaccine does elicit a measurable rise in antibody titer and that it does reduce by about 5-fold the probability of acute clinical cholera. This actual protective effect, however, appears to be short-lived, and the official requirement that immunization be repeated every 6 months to be valid seems to have been justified. The studies showing the protective effect of cholera vaccine were performed in the population of the endemic area—a group having a high incidence of preëxisting antibodies and no doubt considerable preëstablished immunity. Whether or not the vaccine is equally effective in protecting persons having their first experience with the antigens of *V. cholerae* remains an open question. Sound medical advice to any American planning to travel in cholera-affected areas, based on present knowledge, would be: "Get immunized according to existing recommendations and take a booster injection every 6 months, but do not consider that you are totally immune to cholera as a result. Be careful of your personal hygiene, and of your sources of food and drinking water."

The ultimate eradication of cholera as a threat to humanity will probably require more than a program of vaccination. Sanitation seems to have been responsible for the control of cholera in Europe and America, and the economic and scientific development of Asia in future decades may eventually have the same result. In the meanwhile, the amount of suffering, death, and economic loss produced by cholera or the threat of cholera is such that there is a real need for continuing research in the field. One can reasonably hope for a better vaccine, perhaps one that gives immunity of longer duration or one that is less troublesome or less painful to administer. A vaccine effective by the oral route would be particularly useful. Since even the simple treatment outlined above with intravenous fluid and oral tetracycline is not available in many villages where cholera epidemics occur, and such villages rarely have a qualified physician, a need for a simpler and cheaper method of treatment remains. Further work in the field of epidemiology is also required to minimize the chances that cholera will spread even further than it has in recent years. It has been shown recently that short-term carriers and persons with mild but barely symptomatic infections may play a significant role in the spread of cholera within an epidemic situation.[14, 15] The importance of carriers in the spread of cholera into new localities still requires precise definition. In the light of recent studies showing the mutability of *V. cholerae*, both in the field and in the laboratory,[16, 17] one must consider the possibility that forms not easily recognized as *V. cholerae* might in fact be capable of giving rise once again to fully virulent organisms under appropriate conditions. These and many other related questions are among the objectives of a growing cholera research program being supported by the National Institutes of Health.

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Some Considerations in the Diagnosis and Treatment of Hyperparathyroidism

G. D. AURBACH, M.D.*

PRIMARY HYPERPARATHYROIDISM represents an important challenge for the clinician because it is a curable disease when recognized but potentially hazardous to life if untreated. The disorder is most frequently attributable to a parathyroid adenoma and is the consequence of unregulated hypersecretion of parathyroid hormone. Recent surveys[1] reinforce earlier experience showing that extra effort will uncover greater numbers of unsuspected cases, and they suggest that the disease occurs in 0.1 per cent of the clinic population. This relatively high incidence is reflected in the experience of one of our colleagues who found that the apparent incidence of hyperparathyroidism had doubled within 1 year after initiating a vigorous search for new cases at a well-known eastern university medical center. A particular factor responsible for this apparent increase is the greater use of more accurate laboratory procedures, particularly atomic absorption methods for calcium. Undoubtedly, as the use of this method increases the limits will be narrowed for the normal range for calcium in each diagnostic center. Each center should establish its own normal range, and these limits should be revised as experience accumulates.

One considers the diagnosis of hyperparathyroidism when interviewing a patient complaining of bone pain, pathologic fractures, or 1 or more episodes of renal colic. Gastrointestinal symptoms may also occur. Epigastric pain and burning, vague abdominal complaints, and constipation are symptoms encountered rather frequently; peptic ulcers occur in 10 to 15 per cent of the cases. An association between acute pancreatitis and hyperparathyroidism is noted more frequently, and it seems that any case of acute pancreatitis showing a serum calcium greater than 10 mg./100 ml. should cause suspicion of hyperparathyroidism. This point was clearly emphasized by a recent case at the National Institutes of Health. A patient with known chronic pancreatitis was admitted to the hospital with an acute episode of pancreatitis. At that time the blood calcium was normal, but several months later, when the patient returned for a clinic visit and the pancreatic disease had subsided, hypercalcemia was evident. He was readmitted to the hospital, and exploration of the neck revealed a parathyroid adenoma.

It must be emphasized that the disease can occur without frank evidence that any of these symptoms or signs exist. Sometimes patients complain only of vague malaise. An interesting patient was referred after hypercalcemia was discovered fortuitously when her physician sent a blood sample to the laboratory for routine analysis; the laboratory had just installed a 12-channel automatic analyzer, and blood calcium was determined even though not requested. The serum calcium was 17 mg./100 ml., reflecting severe hyperparathyroid bone disease. Despite this there were no definite symptoms related to either the skeletal or renal systems. The high incidence of relatively asymptomatic hyperparathyroidism is borne out by a recent case-finding survey based solely on clinical laboratory results.[1] The fact that significant numbers of new cases can be discovered by this means leads one to question whether blood calcium determination should become routine for all hospital patients.

In the differential diagnosis of hyperparathyroidism one must consider other causes of hypercalcemia as well as distinct disorders associated with demineralization of bone. Hypercalcemia may also occur in hypervitaminosis D, sarcoidosis, the "milk-alkali" syndrome, hyperthyroidism, multiple myeloma, and certain malignant tumors metastatic to bone. Another common manifestation of hyperparathyroidism is hypercalciuria, with calcium excretion in excess of intake, particularly apparent when diets low in calcium are given.[2] Recurrent nephrolithiasis associated with hypercalciuria and normal serum calcium is another disorder that must be differentiated from primary hyperparathyroidism; some of these cases may also show hypophosphatemia, making the distinction even more difficult. Whether this latter category may include some cases with bona fide hyperparathyroidism is still a question of controversy. In a number of such cases the patients have undergone exploration for parathyroid adenoma without tumors being found. In any event it is important to obtain serial determinations of calcium before primary hyperparathyroidism is excluded. It should be mentioned that hypercalciuria and the frequency of renal colic can be dramatically reduced in many of these cases by treatment with phosphate.[3]

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*Chief, Section on Mineral Metabolism, Metabolic Diseases Branch, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Md. 20014.

Special Diagnostic Tests

A corticosteroid suppression test has been employed to distinguish hyperparathyroidism from certain other hypercalcemic states. The hypercalcemia of sarcoidosis, hypervitaminosis D, and idiopathic hypercalcemia of infancy shows invariably a decline with corticosteroid treatment. Also, hypercalcemia associated with multiple myeloma and carcinomatosis sometimes responds to corticosteroid treatment. With very few exceptions hypercalcemia in hyperparathyroidism is resistant to corticosteroid therapy.

A number of tests have been described which are based on the known physiologic action of parathyroid hormone in causing increased phosphate clearance. In many of these tests results are expressed in terms of TRP (per cent tubular reabsorption of phosphate). Several new modifications of these tests have been described and thought to be of greater value in differentiating normal from hyperparathyroid states. However, as further experience accrues with each test, considerable overlap becomes apparent between normal and hyperparathyroid subjects. It is clear that, whenever significant renal impairment exists, one cannot rely on tests based on measurement of phosphate clearance. One test utilizing the renal phosphaturic parameter has been of value. Howard et al[4] found that intravenous calcium effects a decrease in urinary phosphate and a rise in serum phosphate in normal subjects. This response primarily reflects inhibition by hypercalcemia of the secretion of hormone by glands normally responsive to the regulatory influence of calcium. Diminished secretion of hormone is reflected in a lowered rate of phosphate excretion. The autonomous gland in primary hyperparathyroidism does not respond to calcium; thus, phosphate clearance persists at a high rate. Kyle et al[5] have modified the test by measuring phosphate excretion during the period 8 to 10 hours after an evening infusion of calcium. The latter seems to differentiate between euparathyroid subjects and hyperparathyroid patients reasonably accurately when hypercalcemia is not marked. Significant hypercalcemia of nonparathyroid origin will cause chronic suppression of parathyroid secretion; under these circumstances the calcium infusion test is of no value and may be contraindicated.

Radio-immunoassay as a Diagnostic Test

The development of a radio-immunoassay[6] for bovine parathyroid hormone allows detection of the hormone in the circulation. Radio-immunoassays are based on competition between unlabeled hormone and radioactively-labeled hormone for binding to a specific antibody. This test for parathyroid hormone has not been applied fully for routine clinical use because the human hormone does not show complete immunological cross-reactivity with the antiserum to the bovine hormone. For this reason circulating hormone cannot be detected uniformly in normal human subjects, nor can test results distinguish all hyperparathyroid subjects from normal. Nevertheless, use of the assay has often shown abnormally high concentrations of hormone in the plasma of hyperparathyroid subjects; in addition, high concentrations of hormone have been found in the plasma of many patients with hyperparathyroidism due to ectopic production of hormone by nonparathyroid tumors as well as in patients with the secondary hyperparathyroidism of chronic renal disease. Even at the present state of development the radio-immunoassay allows ready detection of the hormone in venous effluent from the parathyroid glands and could probably be adapted to measuring the hormone in concentrates of peripheral plasma. The problem of sensitivity for parathyroid hormone will undoubtedly be resolved by developing a more sensitive antibody, possibly one prepared against human parathyroid hormone itself. Ultimately it is likely that the radio-immunoassay will become the principal diagnostic test for hyperparathyroidism. In particular, measurement of the secretory response to induced hypo- and hypercalcemia should provide definitive differential tests for primary hyperparathyroidism.

Localization of Parathyroid Adenoma

Recent experience suggests that arteriography or venography can be of value in localizing parathyroid adenomas. Contrast material injected into the thyrocervical trunk may show abnormal vessels; occasionally one can find diffuse "staining" indicating contrast material in a highly vascular adenoma. Similarly, venography may outline abnormal vessels suggesting the existence of an adenoma. During venography samples of plasma can be obtained differentially from each side of the neck; radio-immunoassay for parathyroid hormone can give further important information as to location. In a recent case[7] a suspected parathyroid adenoma could not be located after thorough exploration of the neck. At a later date venous angiography was undertaken in an effort to obtain further information. A catheter was passed through the femoral vein to the neck region and serial samples were taken as the catheter was withdrawn. Radio-immunoassay showed that samples from a localized area of the mediastinum contained high concentrations of parathyroid hormone. Subsequent surgical exploration of the mediastinum uncovered an adenoma in the precise area predicted by the radio-immunoassay measurements.

An esophogram with barium swallow is a relatively simple procedure that occasionally will allow delineation of a parathyroid adenoma, particularly one of substantial size in the retroesophageal area. Figure 1 illustrates an X-ray film taken in a recent case; the distorted esophageal pattern corresponded precisely to the location of the adenoma found during surgical exploration.

One of the most difficult diagnostic problems arises when hyperparathyroidism is caused by ectopic production of parathyroid hormone by nonendocrine tumors. A recent study[8] has clearly defined the existence of high concentrations of parathyroid hormone in the plasma and tumors of patients with this syndrome. The laboratory findings do not allow differentiation between hyperparathyroidism caused by parathyroid adenoma and this syndrome; blood calcium is high, blood phosphate is low, and alkaline phosphatase may be elevated. As in primary hyperparathyroidism, hypercalcemia is refractory to treatment with corticosteroids and the high rate of renal phosphate clearance persists despite hypercalcemia. Removal of the tumor corrects the disorder. The possible existence of this syndrome must be considered in any case of hyperparathyroidism where there is a history of weight loss or other symptoms suggesting systemic malignancy. The suspicion of malignancy requires that one carry out extensive clinical, laboratory, and X-ray studies to ascertain the true cause of the hypercalcemia before surgical exploration of the neck is undertaken. We routinely examine a bone-marrow specimen from each case of suspected hyperparathyroidism before surgery. This, of course, helps rule out the existence of multiple myeloma and is occasionally of value in diagnosing lymphoma or metastatic lesions.

Treatment

If surgery is contraindicated, therapy with phosphate orally can provide temporary control of hypercalcemia and nephrolithiasis for periods up to 12 to 24 months. However, surgery is still the only definitive treatment for primary hyperparathyroidism. It is essential that the highest possible rate of success be obtained at the initial surgical procedure. Multiple explorations for parathyroid adenomas expectedly carry increased risk and expense to the patient as well as causing greater difficulty for the surgeon, particularly when scarring from earlier surgery is significant. For these reasons the surgeon must be provided with some assurance that hyperparathyroidism exists based on the complete clinical and laboratory evaluation by the internist. With this background a thorough search can be undertaken at surgery in an attempt to identify all 4 parathyroid glands. This is important because if subsequent surgical exploration becomes necessary the surgeon is provided with useful information about the distribution of glands found at the earlier procedure. In addition, this search guards against the possible existence of diffuse hyperplasia, an occasional cause of pri-

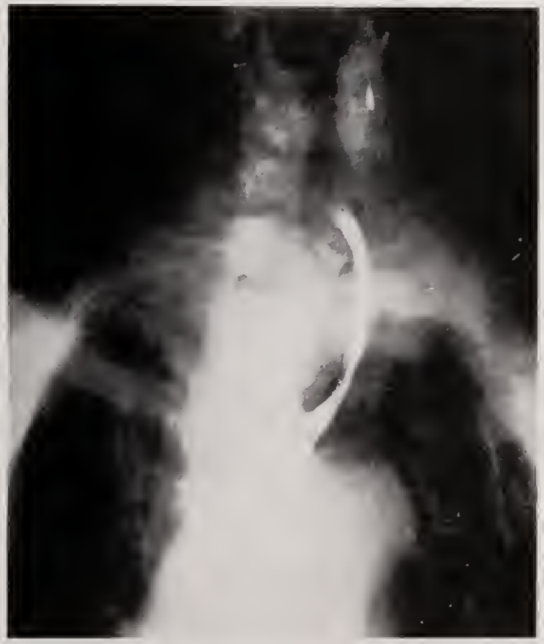

FIG. 1 Esophogram showing distorted pattern caused by large parathyroid adenoma. Tracheal shift was also apparent.

mary hyperparathyroidism, which is an indication for removal of three-fourths of all parathyroid tissue found.

Although hyperparathyroidism is not rare, the incidence is too low for the general surgeon to see significant numbers of patients with the disease. On the other hand, it is important that 1 or more groups of parathyroid surgeons be available to serve each population center. Then, as more cases are diagnosed the physicians in each community will find greater surgical experience to help in treating the disease. These considerations make it reasonable to channel most cases of hyperparathyroidism to a limited number of surgeons in each geographical area.

Summary

Hyperparathyroidism is a potentially dangerous disease that is curable in most instances. The incidence is increasing because of more frequent recognition and the use of better laboratory methods for determination of serum calcium. Recent case-finding surveys indicate that routine determination of calcium is worthwhile for all hospitalized patients. The diagnosis will likely become more precise as suitable modifications of the radio-immunoassay for parathyroid hormone are developed for clinical use. Some success has been achieved in the localization of parathyroid adenomas through use of venous and arterial angiography. Some other problems of hyperparathyroidism have been discussed.

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Shaking Chills Related to Occult Lymphoma

Report of a Case

BRUCE A. CHABNER, M.D.,* JOHN EASTON, M.D.,† AND VINCENT T. DeVITA, M.D.‡

SHAKING CHILLS have long been considered one of the most reliable signs of infection and can be a helpful clue in evaluating unexplained fever. In the case to be discussed the patient's course and autopsy findings indicate that lymphosarcoma may also be the cause of extreme rigors in association with spiking fevers, thus mimicking the clinical picture of occult infection.

Report of Case

A 63-year-old retired Negro engineer entered the Clinical Center on July 7, 1967 because of chills and fever (NIH No. 07-11-16). In 1963 a prostatic mass was resected and found to be a poorly differentiated lymphosarcoma. The patient was well thereafter until December 1966, when he was found to have massive retroperitoneal adenopathy, scalp nodules, and partial bilateral ureteral obstruction. Intravenous Cytoxan® led to apparent complete remission except for persistence of several small scalp nodules. Maintenance therapy consisting of prednisone and chlorambucil was continued for 6 months.

In late June of 1967 the patient began to have marked fatigue and malaise followed several days later by daily episodes of intense rigors, spiking fevers, and profuse diaphoresis. On admission his temperature was 40°C. Positive physical findings included only several 2 cm. scalp nodules which were unchanged since previous evaluations.

The hematocrit was 36.5 per cent, and the white blood cell count was 4,200 per cu. mm. with 63 per cent neutrophils, 14 per cent bands, 2 per cent lymphocytes, 1 per cent eosinophil, and 19 per cent monocytes. Urinalysis revealed 11 to 20 red blood cells and white blood cells per high-power field. All blood chemistries were normal, including liver and renal function tests and uric acid.

Twelve blood cultures, plus urine, sputum, and spinal-fluid cultures and smears were negative. A toxoplasma hemagglutination titer was negative, as were fungal and PPD skin tests. A chest X-ray film and IVP tomograms were normal. Abdominal and pelvic lymph nodes, as demonstrated by residual lymphangiogram dye, were of normal size.

During the first 4 weeks of hospitalization the patient experienced daily shaking chills, usually at 11:00 a.m., lasting 15 to 30 minutes, succeeded by a spiking fever to 39–40°C and several hours later profuse diaphoresis as the fever lysed. In the absence of demonstrable tumor and because of the presence of severe chills, occult infection was suspected, but routine diagnostic measures, including bone-marrow and percutaneous liver biopsies, yielded negative results. Two weeks of cephalothin (Keflin®) and kanamycin (Kantrex®) failed to affect the patient's course. Laparotomy for diagnostic purposes was strongly considered but was ultimately rejected when pancytopenia (white blood cells 1,500 per cu. mm., hemoglobin 8 Gm. per 100 c.c., platelet count 19,000 per cu. mm.) developed in the third hospital week. Bone-marrow biopsy showed hypoplasia of all cellular elements, and chlorambucil was discontinued. The fever and chills continued unabated.

During the fifth hospital week hepatomegaly and rapidly progressive hepatic failure became evident. SGOT rose to 310 units, alkaline phosphatase to 29 King-Armstrong units, and bilirubin to 23.1 mg. per 100 c.c. direct and 31.2 mg. per 100 c.c. total. A second liver scan now showed generally diminished uptake with several large filling defects. Hepatorenal failure supervened, and the patient expired on the forty-second hospital day.

Postmortem examination (A67-208) revealed massive lymphosarcomatous infiltration of the liver (figure 1), which weighed 1,760 Gm. A moderate degree of infiltration of the spleen (weight 350 Gm.) and bone marrow was present. Lymph nodes, though normal in size, also demonstrated a moderate degree of tumor invasion. Focal infiltrates were found in the skin, kidneys, lungs, esophagus, endocardium, and pericardium.

Other findings included a chronic penetrating ulcer in the first portion of the duodenum, cholemic nephrosis, and 4 gallstones, 1 mm. in size. There was no evidence of an acute or chronic septic process which might explain the patient's clinical symptoms. Cultures of the heart's blood taken several hours after death yielded 3 organisms (group D streptococcus, diphtheroids, and *Corynebacterium acnes*), all thought to represent contaminants or terminal sepsis.

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*Clinical Associate, Laboratory of Chemical Pharmacology, National Cancer Institute, National Institutes of Health.

†Pathologist, Pathologic Anatomy, Clinical Center, National Institutes of Health.

‡Senior Investigator, Medicine Branch, National Cancer Institute, National Institutes of Health, Bethesda, Md. 20014. (Reprint requests to Dr. DeVita.)

Discussion

Several previous studies[1,2] have dealt with the difficult problem of differentiating between infection and tumor as the cause of fever in patients with cancer. Few observations, aside from positive bacteriologic evidence and a response to antibiotics, can identify the source of fever. However, according to Fenster and Klatskin,[3] shaking chills may be a "noteworthy" sign pointing toward infection. In reviewing the case histories of 81 patients with hepatic metastases due to a variety of tumors these authors found 19 cases in which fever appeared to be secondary to malignancy. In none of these cases were chills present.

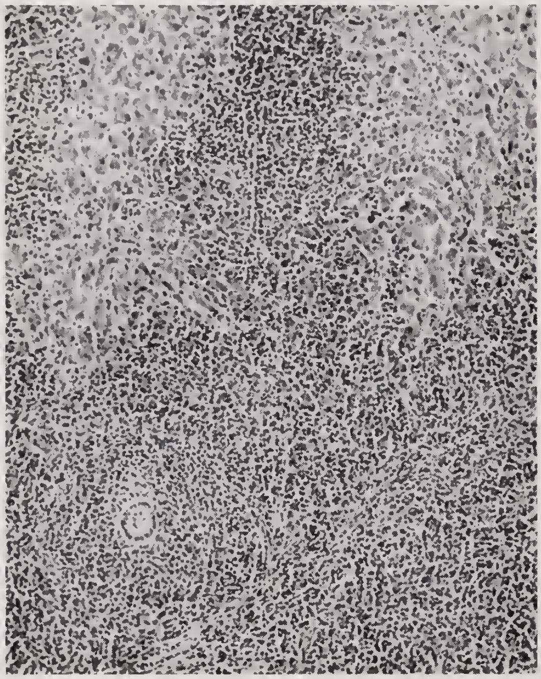

FIG. 1. Section of liver showing massive lymphosarcoma infiltrates in the portal-tract tissues and hepatic lobules. The hepatic cells adjacent to the tumor are degenerated and necrotic, and in other sections of the liver there were even larger areas of hepatocellular necrosis.

In the case under discussion the uncommon association of shaking chills with malignancy is documented. Frank chills have been observed in at least 1 previous case of rapidly growing lymphoma. The patients described by Aledort et al[4] developed sudden renal failure along with spiking fever and chills, and at autopsy massive renal invasion by lymphosarcoma without evidence of infection was found. Rare and less well documented reports of the occurrence of chills in association with renal,[5] stomach,[6] and bowel[6] carcinomas are also to be found in the older literature.

We conclude that, although uncommon, malignant lymphoma and probably other forms of cancer should be considered in the differential diagnosis of a patient having rigors and fever. Aggressive diagnostic measures, including early laparotomy, should be undertaken in the hope that a treatable infection or tumor will be found.

The mechanism by which the tumor led to chills in this patient is obscure. Although extensive hepatocellular necrosis was found at autopsy, tissue necrosis does not appear to have been a factor, since severe rigors were present at a time when liver chemistries, biopsy, and scan were all normal. The extreme rapidity of tumor growth is indicated by the progression to hepatic failure 3 weeks after these negative liver studies.

Death due to massive hepatic invasion and parenchymal necrosis as in this patient has been reported in 1 previous case of malignant lymphoma. In 1934 the Viennese physician, Carl Sternberg,[7] described a 32-year-old man who died of hepatic failure after a fulminant 7-week illness.

Summary

A case has been presented of a 63-year-old man in apparent remission from lymphosarcoma who had shaking chills and fever and who died of fulminant hepatic failure. At autopsy massive hepatic invasion by lymphosarcoma was found; no source of infection was uncovered that might explain the patient's presenting complaints. It is concluded that shaking chills may occur secondary to lymphoma and that an infectious etiology cannot be assumed in evaluating a patient with these complaints.

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Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	Mortality Rates		Hospitalization Rates (Morbidity)
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching.

The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test; pregnanediol determination.

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President's Page

THE EXECUTIVE BOARD—ITS DUTIES AND RESPONSIBILITIES

"THE EXECUTIVE BOARD shall carry on the ordinary business of the Society with all the powers of the Society itself, subject to the Constitution and By-laws and to the action of the Society at any regular or special meeting or by mail ballot" (Chapter VII, Article III, Section 1, Constitution and By-laws, 1966).

The Executive Board consists of the 4 officers, the 2 delegates to the American Medical Association, all *ex officiis*, the 4 elected members, and the Secretary-Treasurer *ex officio*, without vote. The senior elective member is the Chairman.

Matters of general policy are reviewed by the Society at the Annual Business Meeting. New policy shall be submitted to the Society as a whole; no special meetings have been called for the past 2 years.

The Executive Board, with the assistance of its Finance Committee and the Secretary-Treasurer and his staff, control the expenditures of the Society. The financial status of the Society is reviewed at least annually by an independent auditor. Annual dues are specified in the By-laws. The members of the Society may guide the Executive Board by consideration of the proposed budget presented at the Annual Business Meeting.

The Executive Board has charge of the MEDICAL ANNALS OF THE DISTRICT OF COLUMBIA (i.e., the official publication of the Medical Society) and has appointed Dr. Wallace M. Yater Editor and A. Louise Eckburg Executive Editor.

The Executive Board considers all applicants for membership and by a majority vote elects the applicant to a provisional membership for a period of 1 year. The President, with the approval of the Executive Board, appoints all the committees of the Society (now 40). The Board supervises the work of the committees and approves their recommendations prior to their implementation.

Since 1966 the Society has been the grantee of the Regional Medical Program of the Washington Metropolitan Area. The President and Executive Board perform the duties of the grantee, and the Executive Director of the Society is the fiscal agent.

Should not the membership have more participation in the decisions of the Society? Are there any suggestions as to how this could be accomplished?

FRANK S. BACON, M.D.

President, The Medical Society of the District of Columbia, 1969

Editorials

Frank S. Bacon, M.D.

On January 1, 1969 Dr. Frank S. Bacon took office as the 102nd President of the Medical Society of the District of Columbia. He served as President-elect during the year 1968.

Dr. Bacon, an internist, has practiced in Washington for more than 30 years, coming to the District of Columbia in 1935. He was born in Milaca, Minnesota, January 12, 1906, to a physician, the late Harry P. Bacon, and Mrs. Phoebe Stauffer Bacon. He grew up in Minneapolis where he attended the public schools and the University of Minnesota, receiving his Bachelor of Science degree in 1928 and his medical degree in 1931. He interned for a year at Letterman General Hospital in San Francisco.

The new President of the Society comes into his new office with many years of administrative experience acquired at Veterans Administration hospitals. He spent a year at the VA Hospital in Hines, Illinois and 3 years, 1932–1935, at Hampton, Va. Coming to Mt. Alto in Washington in 1935, he became Chief of Medical Service in 1940 and Chief Medical Officer in 1945. During the War years, 1944–46, he held the commission of Colonel, with duty at Mt. Alto Hospital. He is now retired from the Medical Reserve Corps and is engaged in private practice at 2141 K Street, limiting his practice to internal medicine.

Dr. Bacon is on the senior advisory staff in internal medicine at the Washington Hospital Center. He is on the teaching staff of George Washington University School of Medicine as Associate Clinical Professor of Medicine.

A member of the Medical Society of the District of Columbia since 1946, he is a Fellow of the American College of Physicians and holds membership in many other scientific organizations, including the American Medical Association, the American Society of Internal Medicine, the Association of Military Surgeons, the American Heart Association, and the American Public Health Association. He is a member and Past President of the D. C. Society of Internal Medicine.

Dr. and Mrs. Bacon, the former Lucille C. Dixon of Minneapolis, reside at 10851 Glen Road, Potomac, Md. They have 3 children: Mrs. Mary Elizabeth Wolf, of Gaithersburg, Md.; John E. Bacon, of Chevy Chase, Md.; and Frances C. Bacon, a student at Barry College in Miami, Fla.

In his limited leisure time Dr. Bacon enjoys his home and family, working in the yard and garden, and the visits of his 5 grandchildren.

The new President comments wryly that the year as President-elect is a year of indoctrination so well carried out that any new, radical ideas become submerged before taking office. In his first President's Page, in this issue of the Annals, he questions whether the members of the Society have enough "say" in their own organization or whether they have given up most of their initiative to the Executive Board. He wonders whether there is a better way, and the year 1969 under his presidency may well become a year of inquiry into better methods and procedures of member participation in the Society's own sphere of influence.

AMA's New Book on Drugs

Among the past major contributions of the American Medical Association's Council on Drugs have been the publications "New and Nonofficial Remedies," "New and Non-official Drugs" and "New Drugs."

Because of the urgent need for an authoritative, unbiased reference book that will include information on both old and new single-entity drugs and mixtures, the Department of Drugs is deeply involved in an extensive project to develop "AMA Drug Evaluations," a book which will replace "New Drugs."

Development of ADE, as the new publication will be called, is the most formidable task ever undertaken by the Council and its staff. Its anticipated introduction sometime in 1969 will culminate 7 years of planning and discussing. Currently, more than 85 per cent of the total effort of the Council and the Department is being directed toward readying the estimated 1,400-page book for publication. "Outside" professional help, as well as assistance from pharmaceutical information services, also is being utilized in the immense project.

Being developed by the AMA solely for the medical profession, ADE will provide independent, "consensus" evaluations on approximately 1,300 drugs on the priority list which include all most commonly prescribed or used by physicians, all single-entity drugs introduced within the past 10 years, and other selected drugs which have notable value, unusual toxicity, notoriety or need for notoriety. Thorough indexing will assure maximum economy of the physician's time.

In addition, more than 4,000 other nationally distributed drugs, not individually evaluated, will be listed and indexed to give information on their therapeutic category and availability.

Drug Dependence—Heroin

Heroin (commonly called snow, stuff, H, junk, etc.) is diacetylmorphine, an alkaloid derived from morphine; it does not occur in opium. A white, off-white, or brown crystalline powder, it has long been the drug of choice among opiate addicts. Its possession is illegal.

It may be taken by any route but usually by intravenous injection.

Generally sedative and analgesic (rarely excitatory), its effect is like morphine in all respects, but faster and shorter acting. The initial reaction is unpleasant to most people, but calming supersedes and, depending on dose, may progress to coma and death from respiratory failure.

Constricted pupils is an indication of the heroin addict. Calm, inattentive, "on the nod," with slow pulse and respiration, describe him.

Man is very sensitive to the respiratory depressant effect until tolerance develops. Psychic and physical dependence develop more rapidly than with morphine. Dependence liability is high.

Medical Treatment Without Consent*

It is elementary that before undertaking any surgery the physician should be certain that he has the proper patient and be satisfied that he knows exactly what is to be done for the patient.

Where no emergency exists, the physician should carefully consider surgery which is to be performed and acquaint the patient and his family, if necessary, with the risks and results contemplated and likely to occur if complications arise in the operating room or different conditions are discovered. The patient should be given an opportunity to consider proposed medical treatment and to give "informed consent." While a physician need not alienate his patient to obtain his consent to surgery, he must be mindful that the patient may later repudiate such consent on the ground that he was under the influence of his physician.

While it may be convenient for a physician to correct unrelated conditions discovered during the course of an operation, in the absence of an emergency threatening the life of the patient, the physician should not attempt to extend surgery beyond the scope of the patient's consent.

Unless the patient executes a consent form from which it can be reasonably ascertained what type of surgery is authorized, such document is of no value and testimony of the patient and his family and the physician and his staff has to be evaluated to determine whether the parties were thinking on the same plane. . . .Protection against liability for assault and battery can be easily gained by the physician through drafting a precise consent form.

In the final analysis, the physician cannot afford to be aloof from his patients and rely upon nurses or other assistants to explain medical treatment procedures to his patients. Since the physician-patient relationship is consensual in nature, the physician should not delegate to others what may be his most important role, that of assuring the patient that he is a competent professional who fully realizes that the patient is relying upon his judgment.

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Proceedings of the Annual Business Meeting

Dr. William S. McCune, President of the Medical Society of the District of Columbia, called the Annual Business Meeting to order at 5:30 p.m., November 13, in the Medical Society's Exhibit Hall. Among the officers present on the platform with him were Dr. Edward W. Nicklas, Chairman of the Executive Board, Dr. Frank S. Bacon, President-elect, Dr. Paul R. Wilner, a member of the Executive Board, and Mr. Thomas Sadler, Secretary.

In Memoriam to Deceased Members

As the first order of business, Dr. McCune asked the members to rise as he read the names of those who had passed away since the last Annual Business meeting of the Society:

Allman, Francis C. (Active)—June 16, 1968
Bennett, Adolphus B. (Life)—June 9, 1968
Blasko, John J. (Associate)—July 2, 1968
Carr, Elma B. (Life)—August 16, 1968
Choisser, Roger M. (Active)—December 19, 1967
Cox, Oliver C. (Life)—August 2, 1968
Cox, Ronald A. (Active)—July 16, 1968
Cullen, Frederick J. (Associate)—June 10, 1968
Davis, William J. G. (Active)—August 3, 1968
Der-Stepanian, Oshin (Active)—January 5, 1968
Diatz, Philip (Active)—June 14, 1968
Dull, John Reed (Active)—February 17, 1968
Finley, Charles F. (Associate)—May 9, 1968
Gannon, James A. (Life)—December 12, 1967
Geier, Fred A. J. (Active)—December 11, 1967
Gill, G. Bache (Associate)—August 10, 1968
Gladding, Walter R. (Active)—May 26, 1968
Glenn, Joseph B. (Active)—April 23, 1968
Goodman, Reuben (Special)—August 19, 1968
Hawfield, James (Life)—June 26, 1968
Haynes, William P. (Active)—December 20, 1967
Jansen, Russel Jon (Active)—July 23, 1968
Jeffries, Joseph A., Jr. (Active)—January 5, 1968
Jenkins, William H. (Life)—November 20, 1967
Johnson, Don (Active)—January 2, 1968
King, Clapham P. (Life)—August 23, 1968
Macatee, Henry C. (Life)—May 23, 1968
Moyers, Waldo B. (Associate)—December 9, 1968
Orem, John M. (Honorary)—April 5, 1968
Page, R. Massie (Life)—August 27, 1968
Parran, Thomas (Honorary)—February 15, 1968
Queen, Greenville B. (Associate)—September 7, 1968
Ruchwarger, Abraham (Active)—July 8, 1968
Sparks, William C. (Active)—February 22, 1968
Townsend, Maurice L. (Active)—March 23, 1968
Wilson, Lois S. (Active)—September 11, 1968
Wise, Charles S. (Active)—November 23, 1967

Remarks of the President

Dr. McCune commented briefly on some of the high points of his year. These included his luncheon meetings with Dr. Murray Grant, D. C. Director of Public Health, which had given them an opportunity to discuss matters informally of mutual interest and concern; the response of some 150 doctors to his call for volunteers to assist in the care of Resurrection City "residents"; effective testimony on the professional surtax, which was defeated; the matter of zoning problems, which is still pending; and the Annual Scientific Assembly, only a week away, which he and many members had been planning for the past year. He also stated his appreciation for having been elected President.

Report of the Board of Credentials

The Chairman called for the report of the Board of Credentials which appears on page 44. Dr. Philip James, Chairman, read the report, and it was approved as presented.

Report of the Executive Board

The Chairman called upon Dr. Nicklas to present the report of the Executive Board (see page 41). Dr. Nicklas prefaced his report by referring to the death of Mr. George W. Cooley, "who gave so unstintingly of himself to our Society and its members." Since he had already paid tribute to Mr. Cooley at the memorial services, Dr. Nicklas said he would like to pay tribute now to his successor, Mr. Thomas Sadler, who had "more than fulfilled the expectation and trust of the Executive Board." He added, "I am sure I am speaking for all its members when I say that we have been more than fortunate in having Tom Sadler with us. He has quickly grasped all the details of his position, especially financial ones, gained the respect and loyalty of his staff and our Board, and has proven himself a very great asset to this Society."

Dr. Nicklas stated that in addition to the $5,400 grant to Children's Hospital, the Health Foundation of D. C. had given $1,450 toward the expenses incidental to Community Health Week. Dr. Nicklas relinquished the podium to Dr. Wilner to present the nominees for office of the Health Foundation (see page 43). The slate was approved as presented.

Returning to the podium, Dr. Nicklas mentioned the high honor that had come to Dr. Raymond T. Holden by being elected to the Board of Trustees of the American Medical Association and asked Dr. Holden to rise and be recognized. He said he would be greatly missed on the Executive Board but that this national office gives him a wider scope for his administrative abilities.

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Indications: Infections susceptible to oral penicillin G: prophylaxis and treatment of streptococcal infections; treatment of pneumococcal, gonococcal, and susceptible staphylococcal infections; prophylaxis of rheumatic fever in patients with a previous history of the disease.
Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.
Warnings: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia. In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.
Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.
Adverse Reactions: (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").
Composition: Tablets—125 mg. (200,000 units), 250 mg. (400,000 units), 500 mg. (800,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

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Now that Medicaid is implemented in the District of Columbia, he hoped the members would try to make it a success.

He paid tribute to Dr. Herbert S. Gates for his excellent work on the Traffic Committe and to Dr. Leon Gerber and his House and Building Committee. He stated that complete carpeting and refurbishing of the Exhibit Hall are being considered.

The budget as it appears on pages 47–48 was presented and approved.

Dr. Wilner took over the podium to present the nominations to the Board of Trustees of Medical Service of D. C. Since there were no additional nominations from the floor a motion was made that the nominations be closed, and it was moved and carried that a unanimous ballot be cast for Dr. Charles E. Bickam, for a second term of 3 years; Dr. Nicklas, for a second term of 3 years; and Dr. John A. Kenney, Jr., for a 3-year term to succeed Dr. Leonard T. Peterson.

Dr. Nicklas took the podium to nominate Dr. Hilbert S. Sabin for a 5 year-term to the Board of Trustees of Group Hospitalization, Inc., succeeding Dr. O. Hugh Fulcher, whose term expires in 1969. There were no additional nominations and the Secretary was instructed to cast a unanimous ballot for Dr. Sabin.

Dr. Nicklas asked Dr. W. Leroy Dunn, Chairman of the Committee on Constitution and By-laws, to present the proposed changes in the Constitution as set forth on page 43. The first change was a minor one, which would combine the title and duties of Executive Director and Secretary-Treasurer in the same person. The second change was a major one, repealing Chapter IX, which provided for Councils. Dr. Dunn said that the Council concept was laudable but did not work out well in practice. The Board proposed that the By-laws provide instead for 4 standing committees and such special and ad hoc committees as needed. These changes were approved by the membership.

Dr. Nicklas referred to the excellent progress made by the Regional Medical Program and commended its new Coördinator, Dr. Arthur E. Wentz, who succeeded Dr. Thomas W. Mattingly in September, for the enthusiasm with which he has begun his new duties.

DOCPAC under its Chairman, Dr. William H. Cooper, has flourished and he called Dr. Cooper to the platform to make a few comments. Dr. Cooper stated that DOCPAC parallels AMPAC and is now completing its third year of operation. DOCPAC more than doubled its membership in 1968; it has contributed to the political funds of both parties to secure well qualified members on the House and Senate District Committees. He stated that there would be joint billing of DOCPAC and Medical Society membership dues in 1969 but that the DOCPAC contribution is voluntary.

The applications of all new members are acted upon by the Executive Board, upon the recommendation of the Board of Credentials, which constitutes a 1-year provisional membership. It is then incumbent upon the membership to approve the provisional members and to vote them into full membership at this meeting. Full membership status was voted for 75 Active, 24 Associate, and 3 Resident-Intern members listed in the report. Elected to Honorary membership were Dr. George W. Calver, for many years Physician to Congress, and Dr. Louis M. Rousselot, Deputy Assistant Secretary of Defense (Health and Medical).

Dr. Nicklas closed his report by noting that he had been serving in one position or another with the Medical Society since 1930. The work had given him great pleasure and satisfaction, he said, and an opportunity to meet and know many members. He thanked the members again for the privilege of serving as their President in 1964—"the most exciting and rewarding year of my life."

Dr. McCune returned to the podium and asked if there were any comments on the report or whether the entire report could be approved as presented. The report was approved.

Dr. Oscar B. Hunter was recognized. He pointed out that the payment to hospitals of 80 per cent of cost for outpatient care for Medicaid patients, as suggested by the Department of Public Health, was responsible for the deterioration of relations between hospitals and the Public Health Department. He stated that the Hospital Council of the Washington Metropolitan Area is asking for full payment as long as the money is available but member hospitals will accept patients for care after the funds have been depleted. He made a motion that the Society should voice its opposition to less than cost remuneration to the hospitals for Medicaid patients. Dr. Bacon suggested that the motion be referred for study to the Executive Board. The motion as amended was moved and carried.

The report of the Secretary-Treasurer (see page 45) was accepted as presented. It was not read.

Report of the Woman's Auxiliary

Dr. McCune introduced Mrs. Alfred J. Suraci, President of the Woman's Auxiliary, who gave her

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report in behalf of the Auxiliary. It was the second one to be presented before the Medical Society. She related the many and varied activities in which the Auxiliary has participated, such as the Mock Disaster program, Community Health Week, Scientific Assembly, nurse fellowships, and contacts with wives of the Student AMA members.

Report of the Nominating Committee

The Chairman stated that over a thousand ballots had been received in the mail from the membership to select 7 members to the Nominating Committee from a slate of 21. He thanked the tellers who had handled the count of the ballots. They were: Drs. Richard M. Huffman, Shirley S. Martin, John F. Potter, David M. Seitzman, Mitchell W. Spellman, and Robert Stolar.

Dr. Harold Stevens, Chairman of the Nominating Committee, was called to the platform to submit the nominations for office. He presented the following slate:

President-elect: Frank S. Pellegrini
First Vice President: Walter L. Henry, Jr.
Second Vice President: Thomas M. Arnett
Member of Executive Board for a 4-year term: William S. McCune
Member of the Board of Credentials for a 3-year term: Edwin Parker III
Member of the Board of Credentials for a 3-year term: Edward E. Ferguson
Delegate to AMA for a 2-year term: C. Willard Camalier, Jr.
Alternate Delegate to AMA for a 2-year term: William H. Cooper.

These nominees were submitted on behalf of all members of the Nominating Committee, which included, in addition to the Chairman, Drs. Ralph M. Caulk, J. Keith Cromer, Melvin G. Alper, C. Edwin McNamara, Howard E. Ticktin, and Thomas M. Foley, Jr.

No nominees were presented from the floor and the Secretary was instructed to cast a unanimous ballot for each nominee and for the slate as a whole. (The Chairman presented all nominations except one nomination for membership on the Executive Board. Dr. Wilner took the podium to present the name of Dr. McCune.)

The Chairman introduced the new officers who were present, asking each one to rise and be recognized. Dr. Pelligrini, the New President-elect, thanked the Nominating Committee and the membership for his election and stated he would do the best he could to continue the good work of his predecessors.

Other Business

The Chairman presented a Certificate of Appreciation to last year's President, Dr. Henry D. Ecker, who called his term of office "a great inspiration."

At this time Dr. Nicklas took the podium and presented an inscribed gavel to Dr. McCune, the outgoing President, in appreciation for his services and as a token of esteem from the Medical Society.

The Chairman returned to the podium and introduced the new President, Dr. Bacon, who thanked the membership for the honor accorded him and for the opportunity of serving in this high office.

The Chairman read a letter from Dr. Herbert C. Schoenfeld which related to action against members who are implicated in malpractice. Dr. Dunn was called to the podium to comment and he read Chapter VII, Article III, Section 4, concerning the duties of the Executive Board. It was voted to refer the letter to the Executive Board.

Dr. Stevens asked to be heard. He recommended that the Medical Society, on behalf of its membership, protest the curtailed services of the National Library of Medicine, which is now closed on Sundays. He moved that a formal protest be made to the Honorable Wilbur Cohen and Dr. Philip R. Lee, of HEW, requesting that full services of the Library be restored as soon as possible. The motion was carried.

Dr. Harvey H. Ammerman was recognized. He proposed that a resolution in the form of thanks to Dr. Nicklas for his "effective and conscientious manner of carrying out his duties" be incorporated in the minutes of the meeting. The resolution was unanimously approved.

There being no further business, the meeting was adjourned at 7:00 p.m.

Reports Presented at Annual Business Meeting

November 13, 1968

Report of the Chairman of the Executive Board

With the death of George W. Cooley on February 15, our Society experienced one of its greatest losses. A dedicated Executive Director, George Cooley gave unstintingly of himself to our Medical Society. We all miss him and we shall continue to miss his contributions to our progress and growth.

Very unexpectedly last winter the total outstanding balance due on the sale of the M Street property was paid in full. This sum, $105,000, was immediately applied to the principal on the mortgage covering this building. In doing so the Society reduced the principal to $345,000 and realized savings of $25,200 in interest that would have been paid out over a period of several years.

To safeguard the Medical Society building and its occupants, we have instituted a security patrol service. The entire building is checked out a minimum of 3 times between the hours of 6 p.m. and 8 a.m., 7 days a week. This security program will remain in effect as long as the need indicates.

All of us are indeed proud that Dr. Raymond T. Holden was elected to the Board of Trustees of the American Medical Association on June 21. Dr. Holden has served our Society and the AMA diligently and well over a long period of time. We are certain that he has already established himself as a fine and forceful member of the Board of Trustees.

At the request of the Children's Hearing and Speech Center of Children's Hospital, a grant was approved by the Board of Directors of the Health Foundation. This grant of $5,400.00 provided for the purchase of hearing aids for indigent children deafened by rubella, meningitis, and other diseases.

Increased Taxation Defeated

For a while during the spring and summer months we were deeply concerned about the possibility of increased taxation via the introduction of a bill seeking additional revenue for the District of Columbia. The bill sought to remove exemptions which excluded physicians and certain other professional groups from being subjected to an unincorporated business tax or to a surtax. Supported by statistics gleaned from a survey of our membership, President McCune furnished effective testimony to both the Senate and House D. C. Committees in opposition to the issues involved. Happily, the bill was defeated.

Zoning Problems

In the early summer it was brought to the attention of the Medical Society that the District of Columbia Government was considering strict implementation of the Occupancy Law affecting physicians and dentists.

A 1920 law states that a physician having an office in a house or apartment building must also maintain his residence there. A survey was made of our membership to determine if they would be involved and a subcommittee was appointed to work on this problem. It is the plan of the Society to seek revision of this archaic law. Meanwhile, we have been assured that our affected members are "safe" until such time as a meeting is held between the zoning authorities, the Medical Society, and other groups that are affected.

Medicaid

Medicaid has now been implemented in the District of Columbia. Prior to its implementation the Director of Public Health (the Council-appointed Administrator of Medicaid) sent a proposed fee schedule to D. C. physicians for use in Medicaid cases. The Medical Society believed there were many inequities in it and requested a meeting, with good representation from the Medical Society, to make necessary changes. A "Physician Committee" met and reviewed medical reimbursement rates, the result being the adoption of the Relative Value Scale of D. C. as a basis for paying physicians, using a conversion factor that would approximate 80 per cent of the high option Medical Service Plan. To date approximately 200 physicians have agreed to participate in the program.

Helicopter Ambulance Service

The Ad Hoc Committee on Aviation Medicine, with Dr. Robert S. Poole as Chairman, conducted a Symposium on Helicopter Ambulance Service in the spring at the Washington Hospital Center. This stimulated great community-wide interest among those long concerned with the need to provide emergency care for persons injured in traffic accidents and for other emergency medical requirements. The Committee is now working closely with the Metropolitan Washington Council of Governments, studying the possibility of developing a helicopter ambulance service for the Metropolitan Area.

Legislation

Through the efforts of the Obstetric Board and the Medicolegal Committee, we have succeeded in submitting proposed legislation for enactment into law. This legislation ("An Act concerning Medical Records Information and Data to Promote and Facilitate Medical Studies Research and Education") is urgently needed to protect all information—interviews, reports, statements, or other data—gathered by tissue committees, medical staff committees, medical schools, etc., from being used as admissible data in courts, tribunals, etc. Such legislation has already been enacted in many other states.

Nearing finalization is the Society's proposed amendments to the Healing Arts Practice Act. Our proposed amendments would primarily provide for:

1. Changing the organizational structure of the Licensure Commission to follow the pattern of other states which have doctors of medicine and osteopathy as the main components.
2. Establishing licensure by endorsement.
3. Establishing temporary licensure for residents.

We are hopeful of Congressional action on these proposed amendments in 1969.

Professional Liability Insurance

Once again we are indebted to Dr. Harvey Ammerman and his Committee on Medicolegal Problems for their work in connection with our malpractice insurance carrier. Although there was an increase in premium rate this year, the increase was considerably less than that originally proposed by the carrier. This was due to the efforts and negotiations of Dr. Ammerman and his group.

Ruffin Bequest Fund

During the year 2 members of the Society have been assisted financially from resources in the Ruffin Bequest Fund. This Fund was established with a gift provided in the will of Dr. Sterling Ruffin for the purpose of assisting members in financial need. A special committee, of which Dr. J. Spencer Dryden is Chairman, reviews requests for financial assistance and makes recommendations to the Executive Board for final approval.

Budget for 1969

The proposed budget for 1969 appears on pages 47–48. As projected by the Secretary-Treasurer, the budget reflects an anticipated total net income of $12,858.00. Of this total a net income of $11,749.00 is anticipated from all Society operations plus a net income of $1,109.00 from the Building Fund. Only a substantial deviation from these projected budgetary items would bring forth any consideration of a dues increase, so we approach fiscal 1969 with optimism.

You will note that the Secretary-Treasurer, in his report, offers further comment on the proposed budget.

Nominations

Board of Trustees of Medical Service of D. C.: Each year the President, with the approval of the Executive Board, makes nominations to the Board of Trustees of Medical Service of D. C. The terms of 3 members expire in the spring of 1969. It is, therefore, recommended that Dr. Charles E. Bickham and Dr. Edward W. Nicklas be renominated for a second term of 3 years and that Dr. John A. Kenney, Jr. be nominated for a 3-year term to succeed Dr. Leonard T. Peterson. These nominations, if approved, will be presented at the Annual Business Meeting of Medical Service of D. C.

Other Society representatives include Drs. Philip H. Philbin (1970), Jack Kleh (1970), Howard A. Donald (1971), and Russell M. Tilley, Jr. (1971).

Board of Trustees of Group Hospitalization, Inc.: Each year the President, on approval of the Executive Board, nominates a representative to fill the vacancy of the member whose term expires in the spring of the following year.

It is, therefore, recommended that Dr. Hilbert S. Sabin be nominated for a 5-year term to succeed Dr. O. Hugh Fulcher, whose term expires in March, 1969. This nomination becomes final, if approved, at the Annual Business Meeting of GHI.

Other Society representatives are Dr. Josephine E. Renshaw (1970), Dr. Brooks G. Brown (1971), Dr. W. LeRoy Dunn (1972), and Dr. Karl C. Corley (1973).

Health Foundation of D. C.: The By-laws of this Foundation (a nonprofit charitable organization to which donations are tax-deductible) provide that the 11 Board of Directors be named by the Medical Society. The Board must include the Medical Society's President, President-elect, and Secretary-Treasurer, plus a dentist, a pharmacist, and a registered nurse. It is recommended that the following be approved as members of the Health Foundation's Board of Directors for 1 year or until their successors are named:

William S. McCune, M.D. (Society President)
Frank S. Bacon, M.D. (Society President-elect)
Thomas Sadler (Society Secretary-Treasurer)
Wilfred Dudley, D.D.S.
John R. McHugh, Pharmacist
Grace Matthews, R.N.
Roland B. Scott, M.D.
Marvin C. Korengold, M.D.
Edward W. Nicklas, M.D.
Renah Camalier
Mrs. Jane Yates

Committee on Constitution and By-laws

This Committee, under the chairmanship of Dr. W. LeRoy Dunn, has recommended several changes in the By-laws. With the concurrence of the Executive Board the following changes are recommended at this time:

(1-a) Amend Chapter V, Article I, Section 1, which now reads:

> "The officers of this Society shall be a President, a President-elect who shall assume the office of President the year following his election, a First Vice President, a Second Vice President, a Secretary-Treasurer, a Delegate or Delegates, and an Alternate or Alternates to the House of Delegates of the American Medical Association. All offices, except that of Secretary-Treasurer, shall be elective. The Secretary-Treasurer, who need not be a physician, shall be appointed by the Executive Board."

To read:

> "The elected officers of this Society shall be a President, a President-elect who shall assume the office of President the year following his election, a First Vice President, a Second Vice President, a Delegate or Delegates and an Alternate or Alternates to the House of Delegates of the American Medical Association. There shall also be a combined office of Secretary-Treasurer and Executive Director which shall be filled by a qualified person, not necessarily a physician, whose selection, appointment and contract of employment shall be the duty of the Executive Board."

(1-b) Add the following third paragraph to Chapter V, Article I, Section 5:

> "As Executive Director, he shall act as General Administrative Officer in charge of the Society's Headquarters and its employee personnel and perform such other duties consistent with the office as may be directed by the Executive Board."

(2) Repeal Chapter IX, which provides for Councils, and substitute a new Chapter IX, to read as follows:

> "Article I. The Society's organizational structure shall include the following four Standing Committees:
>
> 1. Constitution and By-laws
> 2. Classification
> 3. Grievance
> 4. Medical Ethics and Professional Conduct
>
> Sec. 1. The Committee on Constitution and By-laws shall study all proposed changes in the Constitution and By-laws and make its recommendations to the Society through the Executive Board. This Committee shall see that the proposed changes are properly worded and their contents stated clearly and logically.
>
> Sec. 2. The Classification Committee shall classify members of the Society qualified to be listed in the Society roster in a given specialty.
>
> Sec. 3. The Grievance Committee shall consist of twelve members of the Society, four of whom shall be appointed each year for a term of three years. No member may serve more than two consecutive terms.
>
> The Grievance Committee shall receive from physicians or from laymen complaints pertaining to the relationship of physicians to each other or to their patients. It shall also receive from the Executive Board complaints of alleged misconduct or breach of obligation to the Society by officers or members of the Executive Board of the Society.
>
> After consideration of available evidence in each case, the Committee shall report its findings and recommendations to the complainant and physician with such requests for coöperation as are deemed reasonable. If disciplinary action against a member is judged advisable, the Committee shall so recommend to the Executive Board. The Committee shall specify the type of disciplinary action recommended—to reprimand, suspend any or all privileges, or to expel from membership.
>
> If any competent authority charges a member with a felony or crime involving moral turpitude, the Grievance Committee, after studying the case, may recommend to the Executive Board the suspension, without prejudice, of any or all of the member's privileges until such charges have been disposed of. If the accused is convicted, the Grievance Committee shall reconsider the case and make its recommendation to the Executive Board. In the case of an officer or elective member of the Executive Board, dismissal from the office held and disbarment from future holding of elective or appointive office in the Society may be considered as penalties.
>
> Sec. 4. The Committee on Medical Ethics and Professional Conduct shall consist of seven members each appointed for a term of three years. Members shall not be eligible to serve for more than two consecutive terms.
>
> The Committee, upon the request of a member of the Society, the Executive Board, or any committee of the Society, shall review activities of members in relation to the Principles of Medical Ethics of the American Medical Association and report thereon to the respective individual person and/or persons submitting the request.
>
> Article II. Other committees may be created by the Executive Board to carry out the purposes and business of the Society.

Regional Medical Program

Dr. Arthur Edwards Wentz, neurologist, has been appointed by the Executive Board of the Medical Society to succeed Dr. Thomas W. Mattingly as Coördinator of the Metropolitan Washington Regional Medical Program, which is implementing locally the President's Heart, Cancer and Stroke Program (P.L. 89-239). The Program has been in operation a year and a half under Dr. Mattingly. Dr. Wentz assumed his new position, September 1. Dr. Wentz was formerly associated with the Food and Drug Administration as Extramural Research Advisor in the Office of the Associate Commissioner for Science and served as the director of multidisciplinary medical research programs for the Federal Aviation Agency at Georgetown University Medical Center.

The Medical Society publicly commends Dr. Mattingly for his untiring and successful efforts in the crucial first phases of the establishment of the Program. It was through his efforts that the Metropolitan Washington Region was one of the first 10 to become operational. Since the first operational grant was made on March 1, 1968, the Region has continued to develop new projects related to its basic plans. The Advisory Group this year reviewed and approved 10 projects (comprising a supplemental operational grant application totaling $2,000,000 a year for the next 3 years). Included are additional large programs for the stroke patients and projects for the establishment of Mobile Coronary Care Units. We welcome Dr. Wentz and look forward to a successful burgeoning of the Program.

Fee Review Committee

During the period November 1, 1967 through October 31, 1968 this Committee, under the chairmanship of Dr. Herbert M. Giffin, reviewed 100 cases referred to it by Medical Service of D. C. and private insurance carriers. This compares as follows with cases reviewed the past several years: for the first 10 months of 1967, 103, 100 in 1966, 175 in 1965, 176 in 1964, and 103 in 1963.

It should be emphasized that the cases reviewed represent an extremely small number compared to the thousands processed monthly by the insurance carriers. Many merely need clarification by your Committee as to the actual service rendered or as to some variation from the routine procedure.

The coöperation of the members of the Medical Society of the District of Columbia is appreciated and is readily obtained when it is understood that the Fee Review Committee does not set the fees of physicians but merely recommends the proper liability of the insurance carrier based on the usual and prevailing charges in this area. In this effort it attempts to preserve the good will of both patient and physician as well as the soundness of the insurance program.

New Members

The applications of all new members are acted upon by the Executive Board on the recommendation of the Board of Credentials. Board approval constitutes election to a 1-year provisional membership status. Therefore, at each Annual Business Meeting the Board presents the names of those members whose provisional term is expiring. Following this report 75 Active, 24 Associate, and 3 Resident-Intern members will be voted to full membership.

Edward W. Nicklas, M.D.
Chairman, Executive Board

Report of the Board of Credentials

Since the last Annual Business Meeting, November 19, 1967, this Board has interviewed 131 applicants for membership. This is the first year in 3 in which the number of new members interviewed increased. There were 127 applicants in 1966 and 123 in 1967.

The members of the Board of Credentials think it would be desirable for all Section Chairmen to invite residents as guests to attend one or all of their regular Section meetings. It is hoped that this can be implemented during the coming year.

Again in the past year the preponderance of new members were in the specialties; a considerable number were born abroad, where they had their college and medical school education, with much of their postgraduate training in the United States.

The professional qualifications and caliber of our applicants during the past year have remained of the highest degree.

Philip James, M.D., *Chairman*
William Cole, M.D., *Vice Chairman*
Edward E. Ferguson, M.D.
Eugene Clark, M.D.
Seymour Alpert, M.D.
C. Edwin McNamara, M.D.

Report of the Secretary-Treasurer

As a preface to my report I should like to express my grateful appreciation to the many members who have offered their assistance and advice to me during these first 6 months of my tenure. I am also pleased that I can publicly pay tribute to the Society office staff whose strength and support have been immeasurable.

I invite all members to visit your Society Headquarters. We are here to serve you. If you have any comments or recommendations regarding the service we provide, I shall appreciate hearing from you. In any event, I should, in time to come, like to meet all the members, so please remember that our door is always ajar to you.

Headquarters Activities

The number of meetings held in the Society's Headquarters continues to increase. In the first 10 months of 1967, a total of 375 meetings were held; in the same period in 1968, a total of 448 were held. Of this total number 130 were committee meetings, 34 were Section and specialty meetings, 15 were conferences jointly sponsored with allied or related health groups, and 269 were meetings of the allied or related health groups. Approximately one-fourth (105) of the total meetings were held at night, while 343 were day meetings.

Probably the main social function held at Headquarters was the reception for AMA President-elect (at that time) Dr. Dwight L. Wilbur. More than 200 of our members greeted Dr. and Mrs. Wilbur.

On 3 occasions the Exhibit Hall was used for memorial services. These were for Mr. George Cooley, Executive Director at the time of his death; Miss Beatrice Heiman, long-time secretary to the Executive Director of the Cancer Society of D. C.; and Dr. Lois S. Wilson, an Active member of the Medical Society since March 23, 1953.

Under the guidance of Dr. Warren D. Brill, Chairman of the Committee on Public Information and Education, we again this year sponsored a Community Health Week project. Based on the success of the previous 2 years, a similar project was held in October. An increased number of tests were made available to the public at no charge. Electrocardiograms, chest X-rays, and tests for glaucoma, hearing loss, diseases of the blood, and diabetes were included. Judging by the number who responded, public awareness of the Medical Society is becoming more evident. We are grateful to several related health groups for their coöperation in sponsoring this project.

Medical Bureau

Activity in the Medical Bureau continues at an accelerated pace. The number of physicians served now totals 838, an increase of 8 over 1967. It is estimated that the recorded calls will again exceed the 1-million mark, the second all-time high for Bureau activity.

Turnover among the operators has long been a costly factor and also one which impaired the efficiency of the total operation. Steps have now been taken to remedy this situation, with excellent results. The salary scale for the operators has been revised so that we are competitive with the Telephone Company. This has enabled us not only to attract superior operators but also to reduce the heavy turnover with the ensuing loss of excellent operators. An equitable pay scale has resulted in stability among the operators and the stability has led to improved service.

Far too many "part-time" operators have been on the employment rolls. The majority of these have been converted to full-time, leaving a greatly reduced part-time roster, primarily those available for emergency work.

The work area has been remodeled—another effort to bring about greater Bureau efficiency. Carpeting has been laid and acoustic walls and ceiling have been installed, making the switchboard area as soundproof as possible.

An average of 36,000 calls annually are received for physicians' referral service. At present all these calls come through the main switchboard and are then routed to the Referral Desk. Under consideration and study is removing these calls from the board by establishing 4 direct lines for this service. If this is accomplished, still greater efficiency will be brought about for Bureau subscribers by releasing the operators from the initial handling of these 36,000 calls.

In the early summer we put into operation the tenth position on the switchboard. This relieved the other 9 positions of approximately 7 subscribers each. Traffic study revealed the wisdom of undertaking this action.

We are never at a standstill in our efforts to improve Bureau service. In 1969 we shall continue in this direction. Do you have suggestions or recommendations that you would like to pass along?

Membership

You will note from the following table that our total membership has increased 57 over 1967, the largest increase since 1964. This increase is due in no small part to the accelerated program and drive for new members undertaken by our Membership Committee, under the guidance of Dr. Irving Burka, Chairman. It is encouraging that we are, hopefully, overcoming the "static status" of our membership roster. This roster constitutes the life's blood of the Society, not only fiscally but in terms of activity. Again, hopefully, perhaps the trend to relocate in the suburbs has abated. If we are successful in our efforts to revise certain portions of the Healing Arts Practice Act we may possibly realize further additions to our membership roster via the licensure by endorsement route. Thus a 2-fold purpose will have been served, the primary one being service to physicians by facilitating their secural of a D. C. license to practice.

Year	*Active Members*	*Total Members*
1968	1,640	2,497
1967	1,595	2,440
1966	1,555	2,444
1965	1,518	2,421
1964	1,535	2,313
1963	1,532	2,275
1962	1,505	2,260
1961	1,485	2,233

Medical Annals

The cautious optimism for 1968 reflected in last year's report to the membership appears to be justified as the year draws to a close.

When the books were audited for 1967, they showed an excess of income over expense of $12,866; this was the first time since 1961 that the ANNALS ended the year with a balance to its credit. The dues allocation for 1967 was $20,000, so if half that amount had been allocated, the ANNALS would still have shown a profit.

The amount of dues allocated for the ANNALS for 1968 was $15,000, and it appears now that there will be an excess of income over expense of $3,900, and possibly more. A dues allocation of $15,000 is about right for a membership of some 2,500.

The total number of pages of advertising sold for 1968 will be about 17 per cent less than the number sold in 1967. However, because the number of text pages have been kept in proportion to the number of advertising pages, and because the increase in advertising rates in 1967 became effective for most accounts in January of this year, the financial picture is still favorable. Presently there is every expectation that the ANNALS will fare as well in 1969 as it did in 1968.

Dr. Wallace M. Yater, Editor, has continued the series of special issues which have given the ANNALS excellent scientific material for many years now. With the coöperation of the Consulting Editors, material was supplied for special issues during 1968 by the Walter Reed Army Medical Center, the U. S. Naval Hospital, the Washington Hospital Center, and the George Washington University. The year also included a memorial issue dedicated to the late George W. Cooley, the Medical Society's esteemed Secretary, who was also Managing Editor of the ANNALS.

Society Finances

As stated by the Chairman in his report on the proposed budget for 1969, we are hopeful that fiscal 1969 will produce a net income. Quarterly analysis will be made of income versus expense so that if net income is realized, we may decide between reducing the mortgage or building our reserves. I shall work closely with our Finance Committee on this aspect so that appropriate and sound fiscal recommendations may be made to the Executive Board.

Be assured that every effort will be made to avoid a net loss. It is my opinion that only a major (unforeseen) deviation from the projected budgetary figures would bring this about. Any unanticipated dip in budgeted income would immediately result in exploration of ways and means to decrease the budgeted expenses, notwithstanding the fact that a weather eye is always on this item.

Fiscal highlight of 1968 was, of course, receipt of $105,000.00 as payment in full for the M Street property. Immediate application of this amount to our mortgage resulted in interest savings of approximately $25,000.00. So it is wise to consider application of any net income toward reducing the mortgage even further.

All of us should be pleased that the widow of Mr. Cooley has been provided for under the terms of contract with him. Although small in amount, the monthly check to Mrs. Cooley is indicative of the appreciation of the Society for Mr. Cooley's tireless efforts for the Society. Because Mr. Cooley's salary was considerably lower than his colleagues in the field, an annuity program for Mrs. Cooley (or for himself had he lived to retirement) was established. It should be noted that Mr. Cooley was ineligible for the Society's retirement program, and thus the special annuity program.

For the first time in our new building we anticipate a slight net income over expenses from the Building Fund. This will help somewhat to accomplish the completion of furnishings and decorations of the Exhibit Hall and Board Rooms B and C. To do so fully, however, more funds are needed. Those of you who have not yet done so are invited to contribute to the Building Fund.

No longer will you see a full-time engineer and a full-time maid on the premises. Both positions have been reduced to part-time, their true necessity, with an annual savings in wages of more than $3,000.00 estimated for 1969. Salary stabilization of Society and BUREAU employees has been effected. These salary adjustments now equate our scales with those prevailing in the downtown area. This action was an economic necessity. Employee turnover in all categories has greatly decreased and we are in a position to attract a superior-type applicant when there is a vacancy.

In summary, the Society's economic situation would appear to be sound. The projected budget is a healthy one and should survive as forecast should no ailment develop.

THOMAS SADLER
Secretary-Treasurer

Proposed Budget 1969

I. GENERAL FUND INCOME		
A. Dues		
1. Active and Speical	$135,000.00	
2. Associate	19,500.00	
3. Other	800.00	$155,300.00
B. Other Income		
1. Scientific Assembly	$17,000.00	
2. Regional Medical Program	27,000.00	
3. Interest on savings	5,000.00	
4. Miscellaneous	2,000.00	51,000.00
TOTAL GENERAL FUND INCOME		$206,300.00
C. Reimbursables		
1. Cancer Morbidity Study	$8,740.00	
2. AMA Dues	80,000.00	
3. Blue Cross/Blue Shield	250,000.00	
4. Member and Agency services	8,500.00	
TOTAL REIMBURSABLES		$347,240.00
II. GENERAL FUND EXPENSES		
A. Society Programs		
1. Medical Annals subsidy	$15,000.00	
2. Scientific Assembly	16,500.00	
3. Committee activities	3,000.00	
4. Out-of-town meetings	4,000.00	
5. Public relations	5,000.00	
6. Dues to organizations	350.00	
7. Awards and grants	500.00	
8. Membership luncheons	2,000.00	
9. Committee luncheons	2,000.00	
10. Publications	2,000.00	
11. *Newsletter* and *Medical Events*	2,000.00	
12. Special projects	3,000.00	
13. Office and meeting room space	20,000.00	$75,350.00
B. Office Staffing		
1. Salaries	$73,000.00	
2. Legal Counsel and Audit	6,500.00	
3. Staff Retirement, Insurance and Payroll Taxes	7,500.00	
4. Secretary and Staff expenses	3,500.00	
5. Cooley annuity	1,951.00	92,451.00
C. Office Operation		
1. Postage, supplies and equipment	$16,000.00	
2. Telephone and Telegraph	5,000.00	
3. Office space	15,000.00	36,000.00

TOTAL GENERAL FUND EXPENSES			$203,801.00
TOTAL GENERAL FUND INCOME			206,300.00
EXCESS OF INCOME OVER EXPENSES			$2,499.00
D. Reimbursables			
1. Cancer Morbidity Study		$8,740.00	
2. AMA Dues		80,000.00	
3. Member and Agency services		6,000.00	
4. Blue Cross/Blue Shield		250,000.00	
TOTAL REIMBURSABLE EXPENSES			344,740.00
TOTAL REIMBURSABLE INCOME			347,240.00
EXCESS INCOME FROM REIMBURSABLES			$2,500.00
III. MEDICAL ANNALS INCOME			
1. Advertising, subscriptions, etc.		$55,000.00	
2. Subsidy from General Fund		15,000.00	
3. Miscellaneous		50.00	$70,050.00
IV. MEDICAL ANNALS EXPENSES			
1. Salaries and honorarium		$21,000.00	
2. Retirement, Insurance and Payroll Taxes		2,000.00	
3. Printing and engravings		42,000.00	
4. Supplies and postage		1,500.00	
5. Miscellaneous		500.00	67,000.00
EXCESS OF INCOME OVER EXPENSES			$3,050.00
V. MEDICAL BUREAU INCOME			
1. Alternate Listings		$50,000.00	
2. Telephone Secretarial Service		155,000.00	
3. Interest and Miscellaneous		200.00	$205,200.00
VI. MEDICAL BUREAU EXPENSES			
1. Administrative Salaries		$8,000.00	
2. Operators Salaries		148,000.00	
3. Retirement, Insurance and Payroll Taxes		13,000.00	
4. Telephone and Directory		25,000.00	
5. Equipment, supplies and postage		700.00	
6. Maintenance, utilities and space		5,000.00	
7. Billing service		1,300.00	
8. Miscellaneous		500.00	201,500.00
EXCESS OF INCOME OVER EXPENSES			$3,700.00
VII. BUILDING FUND INCOME			
General Operations			
1. General Fund (office and meeting space)		$35,000.00	
2. Medical Bureau Space		5,000.00	
3. Space leased		31,065.00	
4. Meeting room rentals		3,500.00	
5. Interest and dividend		4,130.00	
6. Other		870.00	$79,565.00
VIII. BUILDING FUND EXPENSES			
A. Operations and Maintenance			
1. Wages	$5,500.00		
2. Service Contracts	11,000.00		
3. Fuel	3,000.00		
4. Guard Service	2,400.00		
5. Insurance	2,000.00		
6. Payroll Taxes	350.00		
7. Supplies and repairs	2,500.00		
8. Utilities	10,500.00		
9. Miscellaneous	50.00	$37,300.00	
B. Loan Payments			
1. Mortgage	$25,000.00		
2. Interest	16,156.00	41,156.00	78,456.00
EXCESS OF INCOME OVER EXPENSES			$1,109.00

See next page for prescribing informati

Lederle
DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE HCl
300
TABLETS (Film Co
Federal law prohibits
LABO
American Cy
Lederle
You've made it one
of your specifics in acute otitis media
DECLOMYCIN
DEMETHYLCHLORTETRACYCLINE

You've made it one of your specifi in acute otitis medi

DECLOMYCIN acts against many strains of H. influenzae, pneumococci and streptococci, t most common invaders. In otitis media, where it is difficult to isolate the causative organism, this coverage may be important. However, some strai may be resistant and other pathogens can be involved.

You've found the high serum levels of DECLOMYCIN important, too. Its prolonged acti permits convenient 300 mg b.i.d. or 150 mg q.i.d. administration.

When specimens are obtainable, your culture studies will indicate the usefulness of DECLOMYCIN.

Effectiveness: DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines in infections caused by organisms sensitive to the tetracyclines.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocoli
pruritus ani. Skin—maculopapular and erythematous rashes; a r
case of exfoliative dermatitis has been reported. Photosensitivi
onycholysis and discoloration of the nails (rare). Kidney—rise in BU
apparently dose-related. Transient increase in urinary output, som
times accompanied by thirst (rare). Hypersensitivity reactions—u
caria, angioneurotic edema, anaphylaxis. Teeth—dental staining (y
low-brown) in children of mothers given this drug during the latter h
of pregnancy, and in children given the drug during the neonatal pe
od, infancy and early childhood. Enamel hypoplasia has been seen
a few children. If adverse reaction or idiosyncrasy occurs, discontin
medication and institute appropriate therapy. Demethylchlortetr
cycline may form a stable calcium complex in any bone-forming tiss
with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Shou
be given 1 hour before or 2 hours after meals, since absorption
impaired by the concomitant administration of high calcium conte
drugs, foods and some dairy products. Treatment of streptococ
infections should continue for 10 days, even though symptoms ha
subsided.

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE

Capsules: 150 mg; **Tablets:** film coated, 3
mg, 150 mg and 75 mg of demethylchlortetr
cycline HCl.

39

LEDERLE LABORATORIES, A Division of
American Cyanamid Company, Pearl River, New York

Lederle

heavenly relief
for unearthly cough

Benylin®
EXPECTORANT

Each fluidounce contains: 80 mg. Benadryl® (diphenhydramine hydrochloride, Parke-Davis); 12 grains ammonium chloride; 5 grains sodium citrate; 2 grains chloroform; 1/10 grain menthol; and 5% alcohol. An antitussive and expectorant for control of coughs due to colds or of allergic origin, BENYLIN EXPECTORANT is the leading cough preparation of its kind. BENYLIN EXPECTORANT tends to inhibit cough reflex... soothes irritated throat membranes. And its not-too-sweet, pleasant raspberry flavor makes BENYLIN EXPECTORANT easy to take. PRECAUTIONS: Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this preparation. Hypnotics, sedatives, or tranquilizers if used with BENYLIN EXPECTORANT should be prescribed with caution because of possible additive effect. Diphenhydramine has an atropine-like action which should be considered when prescribing BENYLIN EXPECTORANT. ADVERSE REACTIONS: Side reactions may affect the nervous, gastrointestinal, and cardiovascular systems. Drowsiness, dizziness, dryness of the mouth, nausea, nervousness, palpitation, and blurring of vision have been reported. Allergic reactions may occur. PACKAGING: Bottles of 4 oz., 16 oz., and 1 gal.

Parke, Davis & Company
Detroit, Michigan 48232

PARKE-DAVIS

410R69

"The inconvenience of a cold"

For a cold, NTz® Nasal Spray provides rapid relief of nasal symptoms. Relief starts with the first spray which opens the inferior part of the common meatus. A second spray, a few minutes later, will shrink the turbinates to help provide sinus drainage and ventilation. Dosage may be repeated every three or four hours as needed, for temporary relief of symptoms. NTz is well tolerated but overdosage should be avoided.

As a sinusitis deterrent, NTz Nasal Spray can be used to keep the nasal passages open during a cold to help prevent development of acute sinusitis—or to help prevent the acute condition from becoming chronic.

Supplied: NTz Nasal Spray, plastic squeeze bottles of 20 ml.; NTz Nasal Solution, bottles of 30 ml. (1 fl. oz.) with dropper.

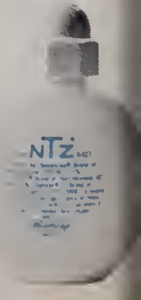
NTz is more than a simple vasoconstrictor. It contains

Neo-Synephrine® (brand of phenylephrine) HCl 0.5 per cent, the major component, virtually synonymous with fast, efficient but gentle nasal vasoconstriction.

Thenfadil® (brand of thenyldiamine) HCl 0.1 per cent, topical antihistamine for reduction of rhinorrhea, sneezing or itching. It combats the allergic reactions that may occur in colds or sinusitis.

Zephiran® (brand of benzalkonium, as chloride, refined) 1:5000, antiseptic preservative and wetting agent to promote penetration and spread of the formula.

Winthrop Laboratories, New York, N.Y. 10016 Winthrop



HEALTH DEPARTMENT NOTES

Medicaid in the District

Two years ago this month I stated in this column: "As we begin the new year one of the most important challenges facing the medical profession and the Health Department is the implementation of the Medical Assistance Program authorized by the 1965 amendments to the Social Security Act under Title XIX, the so-called Medicaid Plan."

In January of 1967 I had high hopes that Medicaid would become fully operational early in that year to provide comprehensive and high quality medical care and services for those in the District of Columbia who are medically needy and that private medicine would play an important and large part in the successful operation of this program.

Since the first D. C. Medicaid Plan was presented in December 1966 there have been many obstacles to overcome. There have been numerous program reviews, new legislation, many comments, much discussion, and several rewritings of the plan. With each revised plan fewer District residents were included for care and treatment under Medicaid and fewer services were offered than originally anticipated.

Initially planned to cover 260,000 persons by 1970, financial limitations plus legislative changes made it necessary for us to limit Medicaid services to 122,000 of our citizens.

This does not mean that 138,000 District residents will be without medical services. It simply means that 49,000 persons in the District, ages 21 through 64, who do not meet the Federal definition of eligibility for aid to families with dependent children and who are neither blind nor disabled, will be eligible for health care from the D.C. Department of Public Health only. Another 89,000 will continue to receive only emergency care, primarily at D. C. General Hospital. No Federal reimbursement will be received by the District Government for services furnished to these residents. Consequently, private vendor services cannot be provided for them at government expense.

When originally planned we anticipated that a family of 4 with an income of less than $4,200 a year would be eligible for services the first year Medicaid was in operation, with this figure rising to $4,780 by 1970. However, necessary redesign of the District's plan places financial eligibility for participation on a scale which starts with a maximum income of $2,100 annually and assets of not more than $2,500 for a single person, $3,560 annual income and assets not over $2,800 for a family of 4, and rises proportionately with the size of the family.

The D. C. Medicaid Program started early in October 1968. Eligible District residents are provided the 5 basic services required in all Medicaid programs. These are inpatient hospital care, outpatient hospital services, laboratory and X-ray services, skilled nursing home services for persons 21 years of age and older, and physicians' services, whether in the hospital, home, or physicians' offices.

In addition, the D. C. Medicaid Program provides skilled nursing home services for children, home health care services, prescribed drugs and medical supplies, blood and blood derivatives or substitutes, services of optometrists, eyeglasses, podiatry care, and public health nursing services.

Our main concern now, as it was in the original plan, is that comprehensive and high quality medical care be made available to all people of the District of Columbia through private vendors.

I hope sincerely that all physicians will review the Medicaid Program for the District of Columbia now in operation, participate in this program, and provide family health care for the indigent. Please write me if you would like more information about medical participation and reimbursement.

Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

Scientific Assembly Award Winners

Dr. William S. McCune, President of the Medical Society of the District of Columbia, presided at the Annual Membership Luncheon held in the International Ballroom of the Washington Hilton Hotel, November 21. Following the introduction of honored guests, Dr. McCune called upon Dr. Warren D. Brill, Chairman of the Committee on Public Education and Information, to present the Society's Annual Awards.

The recipient of the Certificate for Meritorious Service was Dr. W. Montague Cobb, anatomist in practice since 1930. Dr. Cobb, Past President of both the National Medical Association and the Medico-Chirurgical Society of D. C., is Editor of the *Journal* of NMA and head of the Department of Anatomy at Howard University College of

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ON HILTON

REMINDERS OF THE 35th SCIENTIFIC ASSEMBLY

PRESIDENT WILLIAM S. McCUNE (top right) as he opened the 3-day ANNUAL SCIENTIFIC ASSEMBLY of The Medical Society of the District of Columbia at the Washington Hilton Hotel, November 21. At lower left are the annual award-winners (left to right): Mrs. Maurice Friedman, who accepted the John Benjamin Nichols Award for laymen for Planned Parenthood of Metropolitan Washington; Dr. E. Clarence Rice, recipient of the Robins-sponsored Community Service Award; Dr. Warren D. Brill, who presented the plaques; and Dr. W. Montague Cobb, the Society's choice for the 1968 Certificate for Meritorious Service.

A gala social event was the Dinner Dance, November 23. Seated at the table (upper left) are Dr. and Mrs. McCune; President George Burrus of Peoples Drug Stores and Mrs. Burrus (left); and Secretary of Peoples, Mr. C. L. Jesina, and Mrs. Jesina (center). Mr. and Mrs. Burrus have for many years officially hosted the festive cocktail party, long the highlight of the concluding social event of the ASSEMBLY.

At lower right members of the Bavarian Dance Club are shown providing entertainment, with audience participation, at the popular Doctors Office Staff Dinner, November 22.

Medicine. An educator of renown, a researcher in anthropology, and a leader in the civics rights movement, Dr. Cobb is a worthy recipient of the Medical Society's top award for 1968. In accepting the award from Dr. Brill, Dr. Cobb said he had never received anything he would treasure more.

The John Benjamin Nichols Award for Laymen was presented this year to Planned Parenthood of Metropolitan Washington. Mrs. Maurice Friedman, President of the Association, accepted the Award. Dr. Brill stated that the organization was worthy of recognition for its distinguished record of family services and medical care to the indigent over many years.

Dr. Brill presented the Robins Community Service Award to Dr. E. Clarence Rice, clinical pathologist in Washington since 1916. Dr. Rice founded the diabetic clinics of Children's Hospital of D. C. and Garfield Memorial Hospital (now a part of the Washington Hospital Center) and the Hematology Clinic and Tumor Board of Children's. He is editor and founder of *Clinical Proceedings* of Children's and has served on the faculties of both Georgetown and George Washington University Schools of Medicine. Through his untiring leadership of the District of Columbia Diabetes Association, the camp for diabetic children became a reality, and many other benefits have accrued to diabetic patients and their families. Dr. Brill described him as "a medical giant who has led a life dedicated to community service." Dr. Rice accepted the award with his usual modesty, stating that it could not have happened without the help of many others.

President McCune asked Dr. Raymond Osbourn, Chairman of the Assembly's Scientific Exhibit, to announce the Scientific Exhibit award-winners. They were:

First Award: Drs. Melvin G. Alper and Gunter J. Augustin, Washington Hospital Center, and Major John W. Gowdin, MC, USA, Walter Reed Army Hospital, for their exhibit on "Evaluation of Unilateral Exophthalmos."

Second Award: Dr. Louis Wener, Radiologist-in-Chief, The Morris Cafritz Memorial Hospital, for his exhibit on "Clinical Application of Angiography."

Third Award: Dr. Cecil B. Jacobson, Department of Obstetrics and Gynecology, and Drs. Ira G. Wong and Luke Terry, Cytogenetic Laboratory, George Washington University Hospital, for their exhibit on "Drug-induced Embryopathy."

Four exhibits were cited for Honorable Mention. They were:

"Complications in the Use of I.U.D.," Drs. David H. Kushner, Charles E. Townsend, Martin Thomas, and William J. Jaffurs, Medical Staff, Columbia Hospital for Women.

"Central Monitoring: A Valuable Adjunct to Patient Care," Drs. Patricia H. Russell, Charles S. Coakley, Cesar A. Caceres, and Jeannette Kuhn, R.N., Department of Anesthesiology, George Washington University Hospital.

"The Modified Angle Shot in Barium Enema Examination of the Colon," Dr. Louis Wener, Radiologist-in-Chief, The Morris Cafritz Memorial Hospital.

"Recognition and Treatment of Hiatus Hernia," Drs. Howard C. Baron and Leon Sasson, Department of Surgery and Department of Gastroenterology, Jewish Memorial Hospital, New York, N. Y.

Dr. Irving Burka came to the podium next to announce the establishment and requirements for the Philip Burka Award. Dr. Burka, who is Chairman of the Membership Committee, stated that the Philip Burka Award, established in memory of Dr. Burka, who died in April 1967, will be given each year for papers on any medical subject written by resident staff members of hospitals in the Washington Metropolitan Area. There will be 4 prizes, ranging from $500 for first prize to $300, $150, and $50 for the other 3 winners.

Following the presentation of awards and announcements, Dr. McCune turned the meeting over to Frank Harden and Jackson Weaver, of the WMAL Radio Program, who entertained and delighted the audience with stories and lively repartee.

GW Award to Dr. Speck

The George Washington University Medical Alumni Association held a luncheon, November 22, in conjunction with the Medical Society's Assembly. Dr. Jerome Epstein, Luncheon Chairman, presided in the absence of Dr. William Brainin, President of the Association. He presented Dr. George Speck the Award of Merit "in recognition of his distinguished service" to the Association and to George Washington University and for his "outstanding contributions to the field of medicine." An obstetrician and gynecologist, practicing in Alexandria, Va., Dr. Speck is Past President of the Association and an Associate member of the D. C. Medical Society. The "Speck test," a procedure for determining tubal patency, is a contribution to his own field which has gained him wide recognition.

Dr. Harry F. Dowling, Professor and head of the Department of Medicine at the University of Illinois, formerly a member of the D. C. Medical Society, gave an address on the subject, "The Old Order Changeth."

NEW MEMBERS

Active

Willard J. Blankenship, M.D. Office: 901—23rd Street, N.W. Born in Westmoreland, Tenn. Medical degree: Vanderbilt University, 1959. Specialty: Pediatrics.

Kevin Patrick Donohue, M.D. Office: 2829 Connecticut Avenue, N.W. Born in New York City. Medical degree: Georgetown University, 1963. Specialty: Psychiatry.

George William Hoover, M.D. Office: D. C. Village. Born in Chicago, Ill. Medical degree: George Washington University, 1944. Specialty: General Practice.

Pongrac Nicholas Jilly, M.D. Office: Howard University. Born in Pecs, Hungary. Medical degree: University of Pecs, Hungary, 1948. Specialty: General Practice.

John Dale Latendresse, M.D. Office: 5410 Connecticut Avenue, N.W. Born in Red Lake Falls, Minn. Medical degree: Tufts University, 1946. Specialty: Psychiatry.

Samuel Eugene Long, M.D. Office: St. Elizabeths Hospital. Born in New York City. Medical degree: George Washington University, 1959 Specialty: Psychiatry.

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Betty Howell McElroy, M.D. Office: 3000 Connecticut Avenue, N.W. Born in Chauncy, Ill. Medical degree: University of Texas, 1961. Specialty: Psychiatry.

Reza Mostaan, M.D. Office: 11 Mississippi Avenue, S.E. Born in Teheran, Iran. Medical degree: Teheran Medical School, Iran, 1956. Specialty: Internal Medicine.

John Edward Perito, M.D. Office: 1616—18th Street, N.W. Born in Denver, Colo. Medical degree: University of Colorado, 1961. Specialty: Psychiatry.

Lawrence E. Pierce, M.D. Office: Washington Hospital Center. Born in Scranton, Pa. Medical degree: Georgetown University, 1955. Specialty: Internal Medicine.

Robert E. Snell, M.D. Office: 1731 Bunker Hill Road, N.E. Born in Bronx, N. Y. Medical degree: Georgetown University, 1958. Specialty: Internal Medicine.

Associate

Richard I. Mazze, M.D. Office: 7403 MacKenzie Court, Bethesda, Md. Born in Bronx, N. Y. Medical degree: State University of New York, 1959. Specialty: Anesthesiology.

Stanislaw K. Toczek, M.D. Office: Casualty Hospital. Born in Hachow, Poland. Medical degree: Academy of Medicine, Poland, 1950. Specialty: Neurological Surgery.

Resident-Intern

Harris J. Feldman, M.D. Office: 901—23rd Street, N.W. Born in Baltimore, Md. Medical degree: University of Maryland, 1967. Specialty: Radiology.

Peter Craig Nolan, M.D. Office: D. C. General Hospital. Born in Philadelphia, Pa. Medical degree: Temple University, 1966. Specialty: General Surgery.

BEST OF SHOW AT CONGRESS OF CHEST DISEASES

DR. MILTON L. GOLDMAN (right), senior attending at Washington Hospital Center, with his prize-winning painting, "Monday" (casein-water color), which won Best of Show in the first International Physicians' Art Exhibit, held in conjunction with the Tenth International Congress of Chest Diseases at the Washington Hilton Hotel in Washington, D. C., October 4–8, 1968. There were 171 entries, representing physician-exhibitors from all parts of the United States, South America and Europe. DR. ALFRED A. RICHMAN (left), of New York City, physician and sculptor, served as Chairman of the Art Exhibit.

News & Personals

Summary of Executive Board Actions

Proceedings of November 25 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Edward W. Nicklas, Chairman, presided at the meeting which was attended by Drs. William S. McCune, Frank S. Bacon, Jed W. Pearson, Jr., Gudrun Augustin-Rueckert, Paul R. Wilner, Robert J. Coffey, Henry D. Ecker, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Present by invitation was Dr. Arthur E. Wentz, Coördinator of RMP in the Washington Metropolitan Area. The meeting was called to order by Dr. Nicklas at 7:10 p.m.

The minutes of the October 21, 1968 Board meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

October	22	Grievance Committee
November	5	Drug Dependency Committee
	6	Fee Review Committee
	6	Advisory Group to RMP
	7	Physicians' Placement Committee
	12	Board of Credentials
	12	Program Committee, RMP
	13	Membership Committee
	14	Committee on Communicable Diseases
	14	Committee on Occupational Health
	19	Grievance Committee
	19	Medicolegal Committee

Board of Credentials: On recommendation of the Board of Credentials, 11 applicants were elected to Active membership, 2 to Associate membership, and 2 to Resident-Intern membership. Their names appear on page 55. Approval was given to the following changes in membership status:

Transfers

Active to Special: Alec A. Preece
Active to Associate: Rodney V. Hoyle

Resignation

Associate: Alfred Suarez

Washington Regional Medical Program: Dr. Wentz presented a progress report on the Regional Medical Program. He announced that the budget figures, due November 29, were ready for submission and would reflect some salary adjustments, some new positions, and an item for rent in the event of securing other RMP quarters.

The Board instructed the Secretary to explore thoroughly the feasibility of additional space for RMP at the Society Headquarters and to determine whether all present tenants of the building plan to retain their space.

Dr. Nicklas thanked Dr. Wentz for his report and reasserted the Executive Board's full interest in assisting him in any way possible. At this point Dr. McCune discussed a memorandum from Dr. Bacon regarding the proposal of the Committee on Continuing Education that a subcommittee of this Committee be established to handle problems of an administrative nature that relate to the office of the Program Coördinator. The Board agreed to the establishment of such a committee, to consist of the Chairman of the Committee on Continuing Education, the Chairman of the Advisory Group, and one other member of the Committee on Continuing Education, selected by the Executive Board.

Should the Medical Society Become a Sustaining Member of SAMA? A motion was made and carried that the Medical Society of the District of Columbia become a sustaining member of the Student American Medical Association, with an annual contribution of $100.

Membership Committee: The Board voted to accept the recommendation of Dr. Irving Burka, Chairman, that the Membership Committee's scope of activity be expanded to provide aid and assistance to Society members in distress.

The Board requested the President of the Society to write a letter to Dr. Burka expressing its appreciation of the splendid contribution he has made as Chairman of the Membership Committee and thus to recognize in writing his energetic, heartwarming, and humanitarian spirit.

Committee on Occupational Health: The Board voted to accept the recommendation of this Committee that it adopt the Medical Society Relative Value Scale for compensation work, with suitable conversion factor.

Medical Council of Washington Metropolitan Area: A motion was made and carried that the proposed changes in the Medical Council By-laws, submitted by Dr. Ecker, be ratified so as to separate the offices of Secretary and Treasurer.

President's Report: Dr. McCune reported that he had had a conference with Representative Don Fuqua, Democrat, of Florida, in regard to sponsoring the Society's proposed amendments to the Healing Arts Practice Act. It was agreed that Dr. McCune proceed as planned toward having these amendments introduced at the next session of Congress.

A total of 1,165 persons had come to the Society's building for the testing program during Community Health Week, October 20, 21, 22 and 23.

Dr. McCune summarized the contents of a letter from Mr. Warren Magee, dated November 22, in which it was stated that the petition for the allowance of a special appeal from the judgment of the District of Columbia Court of Appeals, which requires that in contact lens fitting by an optician a doctor of medicine be physically present, had been denied.

Annual Business Meeting: The following motions which were presented at the Annual Business Meeting, November 13, were discussed:

1. That the Medical Society endorse the position taken by local hospitals in rejecting a less-than-cost payment policy for Medicaid patients in outpatient clinics, and that this endorsement be communicated to Mayor Washington.

2. That the above motion be referred to the Executive Board for consideration.

Dr. Bacon stated that, in his opinion, the principle of paying 80 per cent of cost or full cost is wrong; that either tends to stimulate costs. It was his belief that reimbursement should be on a fee basis, using the Medical Service Fee Schedule.

A motion was made and carried that action on this matter be tabled for the time being.

Other Business

1. Mr. Sadler read the contents of a letter to Dr. Paul B. Cornely congratulating him on his being named President-elect of the American Public Health Association.

2. It was deemed advisable to investigate the possibility of taking out a policy to cover all members of the Executive Board and the Society's committees to protect them against punitive damages and liability as a result of their Medical Society activities.

3. For information only Dr. Bacon reported that economics is forcing the American Red Cross to increase the cost of blood and blood products as of January 1, 1969.

4. Dr. Nicklas gave a brief report on a meeting he had attended where the possibility of a drug insurance program for aged persons was discussed. No definitive action resulted on the practicability of including drugs free for Medicare patients.

5. Dr. McCune reported that Dr. Samuel Diener will be the Society's representative at a December 2 meeting with the D. C. zoning officials.

There being no further business, the meeting was adjourned at 10:10 p.m.

GENERAL NEWS

The Division of Ophthalmology, Georgetown University, is accepting applications for its fourth 2-year training **program for ophthalmic assistants,** which will start July 1, 1969. The course, to consist of 4 semesters with 2 weeks' annual vacation, is open to men and women, ages 20 to 40 years. Applicants must have 2 years of college, or certification as a registered or practical nurse, or 2 years of office experience with sponsorship by a certified ophthalmologist. There is no tuition. Qualified applicants should write for a descriptive brochure and application forms to Dr. P. Y. Evans, Georgetown University Medical Center, Division of Ophthalmology, Washington, D. C. 20007.

The creation of a **National Center for Mental Health Services, Training and Research** within the National Institute of Mental Health was announced, November 8, by the Honorable Wilbur J. Cohen, Secretary of Health, Education, and Welfare. Dr. Stanley F. Yolles, Director of the Institute, appointed Dr. Sherman N. Kieffer, Assistant Surgeon General of the Public Health Service, Director of the new Center.

Since 1966 Dr. Kieffer has been Director of the Division of Field Investigations and Associate Director for Patient Care in the National Institute of Mental Health. He holds the rank of Rear Admiral in the PHS Commissioned Corps. A graduate of the Illinois Institute of Technology, he holds both a Master's degree in psychology and a medical degree from the University of Minnesota.

Dr. Jacobs, successor to Dr. Cameron at St. Elizabeths Hospital

One of the divisions of the new Center will be St. Elizabeths Hospital-Division of Clinical and Community Services, and Dr. Louis Jacobs was named Director of the Division and Superintendent of the Hospital.

Dr. Jacobs was commissioned Assistant Surgeon in the PHS Regular Corps in 1939 and presently holds the rank of Assistant Surgeon General. Before assuming his present position, he served as Special Assistant (Forensic Psychiatry) to the Director of NIMH. He is a graduate of Jefferson Medical College and received his Master's degree in Public Health from Johns Hopkins University.

Other key staff appointments were: Dr. Donald C. Greaves, Acting Director, Division of Intramural Training at the Center; Dr. David W. Harris, Assistant Superintendent, St. Elizabeths Hospital; Dr. Luther D. Robinson, First Assistant Physician at the Hospital; and Dr. Francis N. Waldrop, Deputy Director of the new Center and Acting Director of the Division of Clinical Research. Drs. Robinson and Waldrop are Active members of the D. C. Medical Society and Dr. Harris is an Associate member.

Dr. James Watt has been appointed **Associate Director of Children's Hospital for Program Planning.** This is a newly created administrative post in which Dr. Watt will develop information to evaluate all programs of Children's Hospital and its affiliated organizations relating to the needs of the community. He will also maintain liaison with area, regional and national planning and action groups.

A graduate of Johns Hopkins University School of Medicine, Dr. Watt was Director of the National Heart Institute in Bethesda from 1952 to 1961, when he became Director of the Office of International Health with the Public Health Service. Since 1967 he has served as Special Assistant to the Surgeon General (PHS) for Program Review.

Mr. Dayton W. Selby has been named Professional Relations Manager of **Medical Service of D. C.** In his new post he will serve as primary liaison between Medical Service and the more than 3,300 Washington Area physicians who participate in the Plan.

Mr. Selby, new Professional Relations Manager of Medical Service

A native of Mount Pleasant, Michigan, Mr. Selby is a graduate of the University of Michigan. He has served as Assistant Manager of the Federal Employee Program, underwritten by Blue Shield and Blue Cross, and previously served in other supervisory positions with Group Hospitalization, Inc.

The members of the **Woman's Auxiliary to the Medical Society of D. C.** were guests of His Excellency, the Ambassador of the Philippines and Mrs. Lopez at a luncheon at the Embassy on January 15. The luncheon honored the wives of the physician-members of the newly organized Philippine Medical Association of Metropolitan Washington. Mrs. Cesar Madarang was Chairman of this special event.

Dr. Merton L. White, of Silver Spring, has been elected President of the **Montgomery County (Md.) Medical Society.** He succeeds

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Dr. Marvin I. Mones. Other officers who will serve during 1969 are: Dr. Carolyn S. Pincock, Vice President; Dr. Thomas M. Wilson, Secretary; and Dr. James A. Roberts, Treasurer. All of these physicians are practicing in Silver Spring except Dr. Wilson, whose offices are located in Bethesda.

Georgetown University School of Medicine has received a grant of $213,401 from The John A. Hartford Foundation, Inc., of New York, for a continuing study into the causes of kidney diseases. Clinical studies specified in the 3-year grant will be performed by members of the Renal and Electrolyte Division of the Department of Medicine at Georgetown University Hospital. The principal investigator, Dr. George E. Schreiner, Professor of Medicine and Director of the Division, will be aided in the study by consultants in the Department of Pathology at Georgetown and at Johns Hopkins University School of Medicine.

Collaborating with Dr. Schreiner on the research at Georgetown will be Dr. John F. Maher, Associate Professor of Medicine and Associate Director of the Division; Drs. William P. Argy, Jr. and Larry Siegel, Instructors in Medicine, and others.

During its 28th Annual Meeting in Washington early in December the **Maryland-District of Columbia-Delaware Hospital Association** elected **Dr. Charles E. Burbridge,** Administrator of Freedmen's Hospital, as President-elect. He will be the first Negro to hold this post.

Dr. Burbridge, a graduate of Iowa University and the University of Chicago, holds one of the first doctorate degrees awarded in hospital administration. He has served at Freedmen's for 22 years, and is a member of the teaching staff at Howard University College of Medicine.

Popular science writer **Frank Carey,** of the Associated Press, was presented a plaque and an award of $1,000 by the Atomic Industrial Forum for his "contributions to the public understanding of the peaceful uses of atomic energy." The award was made at a luncheon, November 12, at the Shoreham Hotel.

Mr. Brian S. Kelly has been named Claims Service Manager of **Group Hospitalization, Inc.** He formerly served as Assistant Office Services Manager for GHI.

The Medical Museum Building, an old red brick landmark at 701 Independence Avenue, S.W., which for more than a century housed the Army Medical Library and the Armed Forces Medical Library (earlier names for the National Library of Medicine), was closed officially on October 4, 1968. Appropriate ceremonies were conducted by the Armed Forces Institute of Pathology.

PERSONALS

Dr. Paul B. Cornely, Professor and head of the Department of Preventive Medicine and Public Health of Howard University College of Medicine, was elected President-elect of the American Public Health Association during its annual meeting in Detroit, November 14. He will be the first Negro to hold the office of President of the APHA. Dr. Cornely received his medical degree from the University of Michigan in 1931 and his doctorate in Public Health from the same University in 1934.

Dr. Cornely, President-elect, APHA, to take office in 1969

Dr. W. Proctor Harvey, Director of the Cardiology Division at Georgetown University Hospital, was named President-elect of the American Heart Association, November 25, at its annual session in Bal Harbour, Fla. Dr. Harvey, who has been serving as Vice President of the Association, will take office at the next annual meeting in November, 1969. He has been a member of the Georgetown faculty since 1950 and Director of the Cardiology Division since 1952. He is a former President of the Washington Heart Association.

Dr. Thomas M. Peery, Professor of Pathology of George Washington University School of Medicine, took office in October as President of the American Society of Clinical Pathologists.

As Chairman of the Medical School's Committee on Educational Policy since 1945, Dr. Peery has been responsible for a number of innovations in the teaching program. For his studies on the possible relationship between brucellosis and heart disease he received the Gold Award for Original Investigation, given jointly by ASCP and the College of American Pathologists, in 1958. He arranged the pathology screening laboratory for physicians at the annual meetings of the AMA in 1961 through 1964, and for this work, which has resulted in better laboratory techniques, the ASCP presented him with a special citation in 1964.

He is consultant to the Veterans Administration, the National Institutes of Health, and the Armed Forces Institute of Pathology. He received his medical degree from the Medical College of South Carolina in 1932 and holds undergraduate and honorary degrees from Newberry College.

Dr. Oscar B. Hunter, Jr., retiring President of the Southern Medical Association, was elected to a 6-year term on the Board of Trustees during the 62nd Annual Meeting of the Association in New Orleans, November 18–21.

The recent SMA meeting was the largest medical convention ever to gather in New Orleans and was held in the recently dedicated Rivergate Exhibition Center. More than 3,000 physicians were registered. **Dr. William B. Walsh,** founder and President of Project Hope, was the guest speaker at the President's Luncheon on Tuesday. On November 20, incoming President Donald F. Marion, of Miami, Fla., accepted the gavel of authority from Dr. Hunter.

The Honorable Lister Hill, who has now retired as Senior Senator from Alabama and Chairman of the Senate Committee on Labor and Public Welfare, received a Certificate of Appreciation from the American College of Radiology at a Washington ceremony, October 21. **Dr. Karl C. Corley,** of Washington, a Chancellor of ACR, made the presentation.

Dr. Corley was elected Third Vice President of the Radiological Society of North America in the closing session of its convention, December 6, in Chicago.

At a fall meeting in Chicago of a liaison committee of the National Medical Association and the American Medical Association, **Dr. John A. Kenney, Jr.** was appointed chairman of a subcommittee to "collect all possible information regarding Howard and Meharry medical schools and to keep the committee members acquainted with the problems encountered." The liaison committee called for 4 major surveys relating to black students in medical schools and NMA-AMA membership, and also asked for a study of ways to financially aid such medical schools as Meharry and Howard.

Dr. Clifton R. Brooks was elected Secretary of the American Association for Clinical Immunology and Allergy in Las Vegas, Nev., during its annual meeting, November 11–13. A pediatrician and allergist, Dr. Brooks is a medical officer in the Department of Pediatrics at D. C. General Hospital. He received his medical degree from the University of Wisconsin in 1946.

Dr. Nina B. Woodside has been named Associate Director for planning and research of the D. C. Department of Public Health. The founder and former Chief of the District's Bureau of Chronic Disease Control, Dr. Woodside is the first woman to hold an associate directorship in the Health Department. Early in 1968 she received the Federal Woman's Award for "superior leadership" and "administrative competence." Dr. Woodside is a graduate of George Washington University and the Woman's Medical College of Pennsylvania.

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Dr. Raymond L. Standard was promoted to head the Bureau of Chronic Disease Control. He is a 1952 graduate of Howard University College of Medicine.

Mr. Theodore Wiprud, former Secretary and an Honorary member of the D. C. Medical Society, has accepted 2 appointments as consultant. He will serve on the National Advisory Council on Allergy and Infectious Diseases to the National Institutes of Health and on the Board of Sponsors of the Ophthalmic Research Foundation, which is affiliated with George Washington University.

Dr. Wallace M. Yater and Dr. Clayton B. Ethridge were honored by the D. C. Society of Internal Medicine at a dinner meeting at the Walter Reed Officers Mess, November 12. Each was presented with a gold pen and pencil set and were made honorary members of the Society. Dr. Jack Kleh, President of the Society, presided at the dinner and made the presentations.

Dr. Frank A. Finnerty, Jr. of McLean, Va., is the new President of the Georgetown University Alumni Club of Washington. A graduate of Georgetown University, with a Bachelor of Arts degree in 1943, he received his medical degree, also from Georgetown, in 1947. He joined the Georgetown faculty in 1958 and at present is Associate Clinical Professor of Medicine.

Dr. William H. Cooper is serving as President for 1968-69 of the Spring Valley-Wesley Heights Citizens Association.

At the meeting of the Committee on Credentials of the **American College of Physicians** in Philadelphia, November 9, the following Washington physicians were elected to fellowship in the College: **Drs. Carlton P. Alexis, Frank S. Bacon, Antonio C. deLeon, Jr., Robert A. Fischer, W. Luther Hall, John J. Hughes, Charles S. Ireland, Marshall H. Jacobson, Richard J. Meyer, Wilder P. Montgomery, Joseph K. Perloff, Stanley A. Schwartz, Joseph P. Swift, and Henry Wilde.**

The following were elected to Associate membership in the College: **E. Herbert Bauersfeld, Alban W. Eger, Clifton R. Gruver, Milton Gusack, Paul Schlein, Bernard J. Walsh, and Richard A. Wilson.**

OBITUARIES

Paul Budd Magnuson, M.D.

(1884–1968)

Dr. Paul B. Magnuson, nationally known orthopedic surgeon and former Medical Director of the Veterans Administration, died, November 5, 1968 at George Washington University Hospital. He lived at 3121 O Street, N.W.

Dr. Magnuson was recruited for Veterans Administration Service under its Director, General Omar N. Bradley, in 1945, following World War II, as Director of Research and Education. Three years later he succeeded Dr. Paul R. Hawley as Medical Director.

Shortly after leaving the VA in 1951, Dr. Magnuson was appointed head of President Truman's Commission on Health Needs of the Nation. The Commission's year-long study resulted in the first comprehensive appraisal of this country's medical needs and shortcomings.

Dr. Magnuson was born in St. Paul, Minnesota, in 1884 and received his medical degree from the University of Pennsylvania in 1908. He earned graduate degrees from Duke and Baylor Universities. He was commissioned Major in the U. S. Army Medical Corps during World War I and was civilian adviser to the Surgeon General of the Army from 1941 to 1946.

Dr. Magnuson was one of the founders of the Rehabilitation Institue of Chicago and in his later years it received his major personal interest.

He authored 2 books, "Fractures" and "Ring the Night Bell."

He is survived by his wife, Mrs. Laura C. Thompson Magnuson; a son, Paul B. Magnuson, Jr., of Locust Valley, N. Y.; and a sister, Mrs. Harold N. Hansen, of Kentfield, Calif.

Elinor Alice Rossbach, M.D.

(1905–1968)

Dr. Elinor A. Rossbach, Washington psychiatrist, died, October 20, 1968 at the Clinical Center of the National Institutes of Health in Bethesda, Md.

Dr. Rossbach was born in Jersey City, N. J., October 20, 1905. She received her early schooling in Columbus, Ohio, and earned both a Bachelor of Art and a Bachelor of Science degree in education in 1926 and a Master's degree in 1928, all from Ohio State University. She continued her graduate study in French and German at the University from 1927 to 1929 and at Bryn Mawr College, 1929 to 1931. Between the years 1928 and 1939 she taught German and French at various colleges and universities.

Deciding on a new career, she enrolled again at Ohio State University, this time in the School of Medicine, and received her medical degree in 1944. She was intern and resident physician for a year in Washington at Gallinger Municipal (now D. C. General) Hospital and was enrolled for psychiatric training at St. Elizabeths Hospital from 1945 to 1948. She stayed on at St. Elizabeths as Medical Officer until she died.

Dr. Rossbach was elected to Active membership in the Medical Society of the District of Columbia in 1951. She was a member of the American Medical Association, the American Psychiatric Association, St. Elizabeths Hospital Medical Society, and the Washington Psychiatric Society. A Phi Beta Kappa, she was a member of the American Association of University Women and the Bryn Mawr Alumnae Association.

Surviving her are 2 half-sisters, Mrs. Hannah Phillips, of Westerville, Ohio, and Mrs. Eva Schaefer, of the U. S. Embassy in Djakarta, Indonesia.

William Heman Clements, M.D.

(1907–1968)

Dr. William H. Clements, general practitioner, died suddenly, November 3, 1968, at his home, 6001 35th Avenue, Hyattsville, Md.

A native Washingtonian, born July 20, 1907, Dr. Clements was the son of Dr. Lyman J. Clements and Harriet Clay Battles Clements and a nephew of Dr. Samuel Lee Battles. He received his B.A. degree from George Washington University in 1928 and his medical degree from the same University in 1931. He interned the following year at Sibley Memorial Hospital.

He served Casualty Hospital as anesthetist for many years and had staff privileges at most of the Washington hospitals.

Dr. Clements was elected an Active member of the Medical Society of the District of Columbia in 1935 and transferred to Associate membership in 1958 when he moved his offices to the suburbs. He was a member of the American Medical Association, the American Academy of General Practice, the Southern Medical Association, and an Active member of the Prince Georges County Medical Society. He was Past Commander of the U. S. Coast Guard Auxiliary Flotilla, the Potomac River Power Squadron, and the West River Yacht Club.

His wife, Mrs. Lillian M. Clements, survives him together with 1 son, William H. Clements, Jr., of Cheverly, Md., and 2 daughters, Mrs. Gerald P. Brierly, of Columbus, Ohio, and Mrs. John S. Graham, of Honolulu. He also leaves 2 brothers and 3 sisters.

Norman Clifford Shoemaker, M.D.

(1908–1968)

Dr. Norman C. Shoemaker, general practitioner, died, October 9, 1968, at the Washington Sanitarium and Hospital. He maintained offices at his home, 9201 Kingsbury Drive in Silver Spring, Md.

Dr. Shoemaker was born in Columbus, Ohio, June 19, 1908. He was a graduate of old Central High School in Washington, D. C. and attended George Washington University. He received his medical degree from the University of Nebraska in 1933 and returned to Washington to intern at Sibley Memorial Hospital. For 2 years he was associated in surgery with the late Dr. Joseph Horgan, of Washington.

He had practiced in Silver Spring for 35 years and was on the medical staff of Suburban Hospital and Washington Sanitarium and Hospital.

Dr. Shoemaker was an Associate member of the Medical Society of the District of Columbia from 1938 until 1960. He was a member of the American Medical Association, the Medical and Chirurgical Faculty of the State of Maryland, the Montgomery County Medical Society, the Silver Spring Academy of Medicine, and the Washington Medical and Surgical Society. Also a civic leader in Silver Spring, he had served as President of the old Town Hall and was a member of the Rotary Club, the Elks, Masons, and the Shriners.

He leaves his wife, Mrs. Alice Neri Shoemaker, and 2 daughters, Mrs. Normal Palacios, of Berkeley, Calif., and Mrs. Carol L. Ward, of Silver Spring, Md. His mother, Mrs. Fern Shoemaker, and a sister, Mrs. Aucha Whitehouse, both of Clearwater, Fla., survive him, together with 2 brothers, Harwood Shoemaker, of Atlanta, Ga., and Claude Shoemaker, of Omaha, Nebr.

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1969

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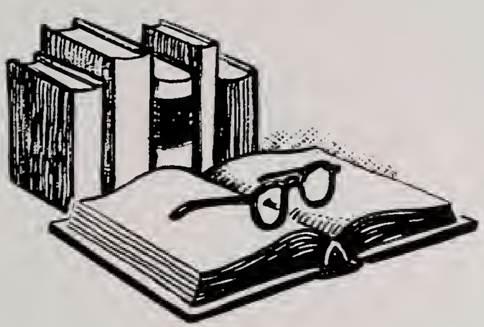

Book Reviews

Atlas of Precautionary Measures in General Surgery. Ivan D. Baronofsky, M.D., Ph.D. Price, $23.50. Pp. 281, illustrated with 111 plates and 132 figures by Daisy Stilwell. St. Louis: Mosby, 1968.

This is an atlas of surgery which is limited to the most frequently performed operations and the problems of the general surgeon. Written by one surgeon, it covers those cases which he personally performed in a 6-month period. He is now Professor and Chairman of the Department of Surgery of Hahnemann Medical School, Philadelphia.

Although the title of the book refers to precautionary measures in general surgery, it is actually a well illustrated and well written atlas of how to do the most common procedures safely. It is an excellent teaching atlas. As you open the book, the left-hand page describes the various steps in doing an operative procedure, sometimes accompanied by diagrams, while the right-hand page has excellent illustrations showing the steps outlined on the opposite page. Although it is very difficult to teach surgery from a textbook of any sort, this book does almost exactly that. The writing is quite clear and directly related to the illustrations on the opposing page, so it is possible to follow any particular operative procedure step by step.

I recommend this book highly, particularly to surgical residents who wish to learn how to do an operative procedure fairly well before going to the operating room and also for the more experienced surgeon who wishes to review the steps in a procedure which he does rather infrequently. To quote Dr. Baronofsky from the preface, the "purpose of this book is to point out some of the surgical landmarks that, if thought about as one operates, may prevent serious complications." He gives an alternate title, "Defensive Surgery," to the book, and by showing the operator how to do surgery smoothly, with a knowledge of what he is doing, I think he accomplishes his purpose.

Maurice J. Casey, M.D.

Atlas of Fluorescence Fundus Angiography. Shinichi Shikano, M.D., and Koichi Shimizu, M.D. Price, $28.00. Pp. 201, illustrated (some in color). Philadelphia: Saunders, 1968.

Fluorescence angiography utilizes intravascular fluorescein to visualize circulatory events in the posterior segment of the eye. Within less than 8 years it has grown from an experimental technique into a practical clinical means of examining the retina and choroid. Although fluorescence angiography has not proven a panacea for all our diagnostic dilemmas, it has provided new insights into the pathophysiology of occlusive vascular disease of the retina, diabetic retinopathy, and degenerative macular disease. Perhaps its greatest contribution has been its emphasis on meticulous ophthalmoscopy and on constructing anatomic explanations for observed lesions.

This new atlas of fluorescein angiograms originates from the Department of Ophthalmology of the University of Tokyo School of Medicine. It brings together for ready reference much material widely scattered in the literature that has accumulated over the last few years. The book is beautifully illustrated, with angiograms that show as excellent detail as any produced in this country.

A section describing angiographic findings in the normal fundus serves to introduce the reader to basic principles. Chapters on circulatory, inflammatory, degenerative, and neoplastic diseases of the retina and choroid deal with most major problems, including such entities as Takayasu's disease and Harada's disease, which are relatively rare in the U.S.A. but rather common in Japan. The running text points out salient features of the accompanying angiograms and discusses their pathophysiologic implications. The presentation is not complete and will not serve as a primary text for those not already familiar with basic ophthalmoscopy.

Minor but annoying typographical and grammatical errors mar the text somewhat; this seems to be unavoidable in communications from Japan, although it does seem that the publisher might have been of greater help.

This book is highly recommended to all those who would deepen their understanding of retinal and choroidal disease.

Ronald S. Fishman, M.D.

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IN BRIEF.

Contraindications: History of sensitivity or severe intolerance to aspirin, meprobamate or ethoheptazine citrate.

Warnings: USE IN PREGNANCY: Safety for use during pregnancy or lactation has not been established; therefore, it should be used in pregnant patients or women of child-bearing age only when the physician judges its use essential to the patient's welfare.

Precautions: Keep out of reach of children. Not recommended for patients 12 years old or less. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate in susceptible persons—as alcoholics, ex-addicts, severe psychoneurotics—has resulted in dependence or habituation. Withdraw gradually after prolonged excessive dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance, with resultant slowed reactions and impaired judgment and coordination. If drowsiness, ataxia or visual disturbances (impairment of accommodation and visual acuity) occur, reduce dose. If symptoms persist, patients should not operate machinery or drive. After meprobamate overdose, prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and hyperventilation are reported. Give cautiously and in small amounts to patients with suicidal tendencies. Treat attempted suicide (has resulted in coma, shock, vasomotor and respiratory collapse and anuria) with gastric lavage and appropriate symptomatic therapy (CNS stimulants and pressor amines as indicated). Two instances of accidental or intentional significant overdosage with ethoheptazine and aspirin have been reported. These were accompanied by CNS depression (drowsiness and lightheadedness) but resulted in uneventful recovery. On basis of pharmacologic data, CNS stimulation could be anticipated, with nausea, vomiting and salicylate intoxication (requires induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, and observation for hypoprothrombinemic hemorrhage [usually requires whole blood transfusions]).

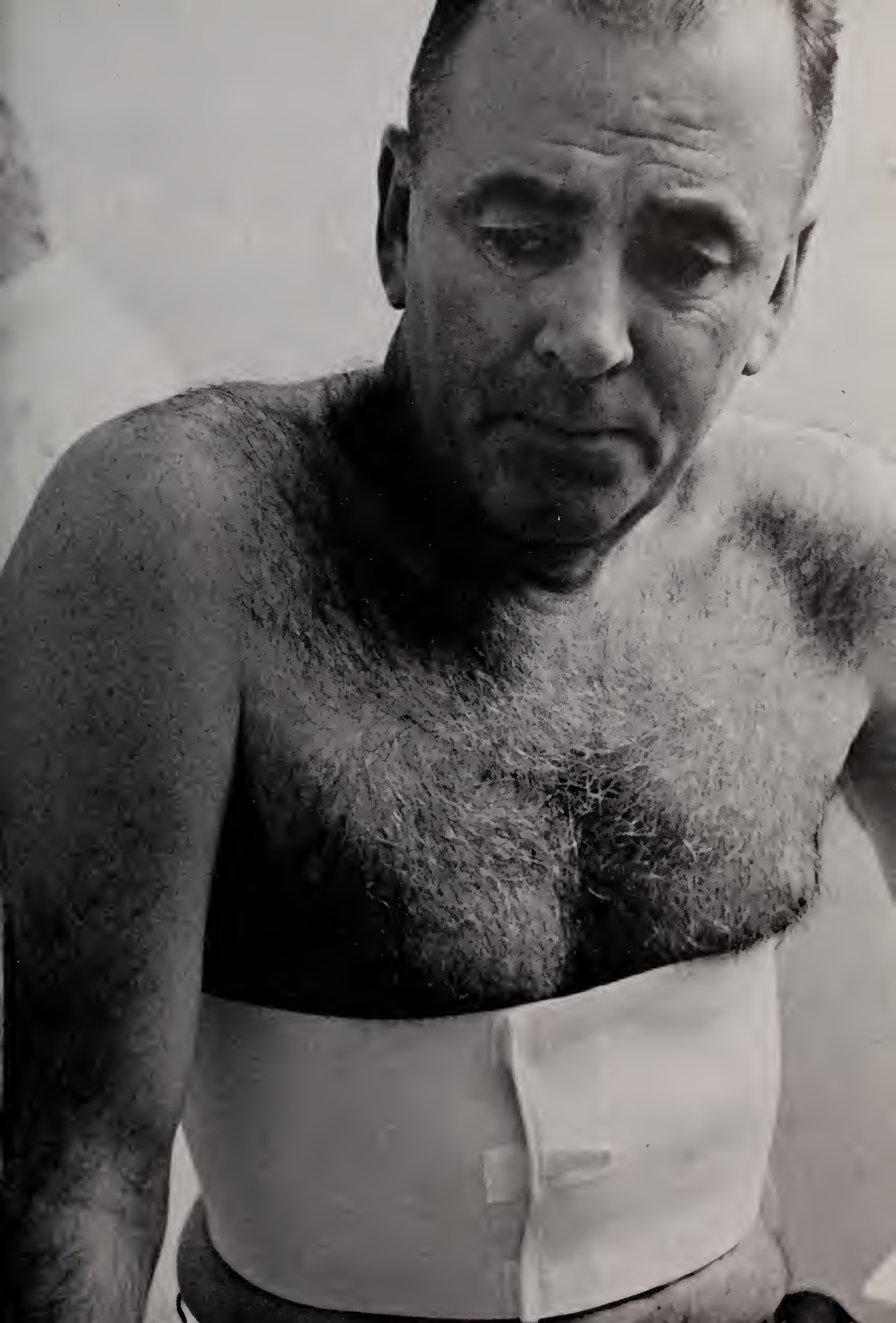
Adverse Reactions: Ethoheptazine and aspirin may cause nausea with or without vomiting and epigastric distress, in a small percentage of patients. Dizziness is rare at recommended dosage. Meprobamate may cause drowsiness, ataxia and rarely allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses. Such patients may have had no previous contact with meprobamate and may or may not have an allergic history. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. If allergic reaction occurs, discontinue meprobamate; do not reinstitute. Severe reactions, observed very rarely, include fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. These cases should be treated symptomatically including, when indicated, such medication as epinephrine, antihistamine and possibly hydrocortisone. A few cases of leukopenia, usually transient, have been reported on continuous use. Rarely, aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported, almost always in presence of known toxic agents.

Overdosage: See precautions section for management of overdosage.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories Philadelphia, Pa.

Photo professionally posed.



You be the judge, Docto

Summation:
In addition to its primary indications for duodenal and gastric ulcer, Robinul Forte (glycopyrrolate) is indicated for other G-I conditions that may benefit from anticholinergic therapy. Robinul-PH Forte (glycopyrrolate 2 mg. with phenobarbital) is indicated when these situations are complicated by mild anxiety and tension.

Contraindications: Glaucoma, urinary bladder neck obstruction, pyloric obstruction, stenosis with significant gastric retention, prostatic hypertrophy, duodenal obstruction, cardiospasm (megaesophagus), and achalasia of the esophagus, and in the case of Robinul-PH Forte, sensitivity to phenobarbital.

Precautions: Administer with caution in the presence of incipient glaucoma.

Adverse Reactions: Dryness of the mouth, blurred vision, urinary difficulties, and constipation are rarely troublesome and may generally be controlled by reduction of dosage. Other side effects associated with the use of anticholinergic drugs include tachycardia, palpitation, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, drowsiness, and rash.

Dosage: Should be adjusted according to individual patient response. Average and maximum recommended dose is 1 tablet three times a day; in the a.m., early p.m., and at bedtime. See product literature for full prescribing information. Supply: Robinul (glycopyrrolate 1 mg.): Robinul Forte (glycopyrrolate 2 mg.): Robinul-PH (glycopyrrolate 1 mg.) with phenobarbital 16.2 mg. (Warning: may be habit forming); Robinul-PH Forte (glycopyrrolate 2 mg.) with phenobarbital 16.2 mg. (Warning: may be habit forming), in bottles of 100 and 500 tablets. A. H. Robins Company, Richmond, Va. 23220.

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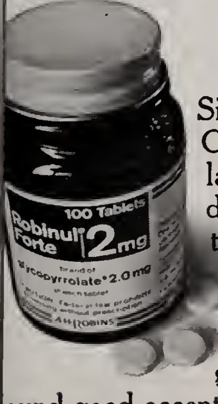
(glycopyrrolate)



Six years ago the A. H. Robins Company introduced glycopyrrolate, a unique anticholinergic agent described in the prescribing literature as more closely approaching the ideal compound for controlling gastric hyperacidity and hypermotility of the G-I tract. Although glycopyrrolate (Robinul Forte) ound good acceptance among numerous physicians, nany others just didn't seem to want to give it a try, robably because the anticholinergic they were aleady using was giving acceptable results.

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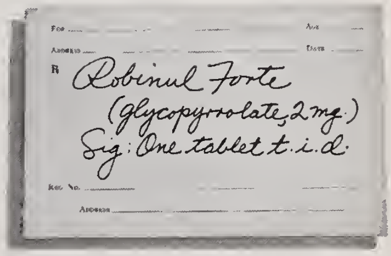

℞ Robinul Forte
(glycopyrrolate, 2 mg.)
Sig: One tablet t.i.d.

Next: Wait 10 days or until your patient comes in for his next appointment and get his "verdict" as to how he feels. Examine all the evidence and make your evaluation of his condition.

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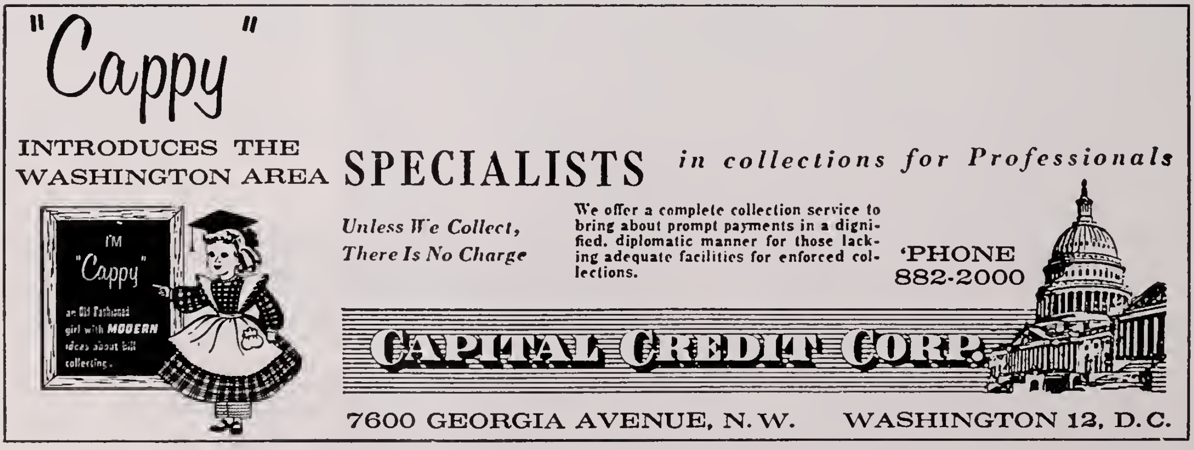

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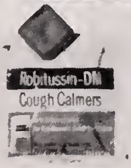

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January 23–25: Southern Society for Clinical Investigation. Jung Hotel, New Orleans. Address: Mr. James E. Bryan, 2011 Eye Street, N.W., Washington, D. C. 20006.

February 8–13: International Academy of Proctology (Annual Congress and Teaching Seminar). Hollywood Beach Hotel, Hollywood, Fla. Address: Dr. Alfred J. Cantor, Executive Secretary, 147–41 Sanford Avenue, Flushing, N.Y. 11355.

February 9–10: Congress on Medical Education (65th Annual). Palmer House, Chicago. Address: Dr. C. H. William Ruhe, Secretary, AMA Council on Medical Education, 535 North Dearborn Street, Chicago, Ill. 60610.

February 18–22: American College of Radiology. Regency-Hyatt House Hotel, Atlanta, Ga. Address: Mr. William C. Stronach, Executive Director, 20 North Wacker Drive, Chicago, Ill. 60606.

February 26–March 2: American College of Cardiology. New York Hilton, New York City. Address: Mr. William D. Nelligan, Executive Director, 9650 Rockville Pike, Bethesda, Md. 20014

March 15–19: American Academy of Allergy. Americana Hotel, Bal Harbour, Fla. Address: Mr. James O. Kelly, Executive Secretary, 756 North Milwaukee Street, Milwaukee, Wis. 53202.

March 27–29: Southern Society of Anesthesiologists. Marriott Motor Hotel, Atlanta, Ga. Address: Dr. Richard G. Zepernick, Mercy Hospital, New Orleans, La. 70119.

March 28–29: Third National Congress on the Socio-Economics of Health Care, sponsored by the AMA Council on Medical Service and Division of Health Service. Palmer House, Chicago. Address: Mr. J. E. Garland, Secretary, AMA Council on Medical Service, 535 North Dearborn Street, Chicago, Ill. 60610.

April 20–25: American College of Physicians (50th Annual Session). Conrad Hilton Hotel, Chicago. Address: Dr. Edward C. Rosenow, Jr., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

April 28–May 1: American College of Obstetricians and Gynecologists. Americana Hotel, Bal Harbour, Fla. Address: Dr. Michael Newton, Director, 79 West Monroe Street, Chicago, Ill. 60603.

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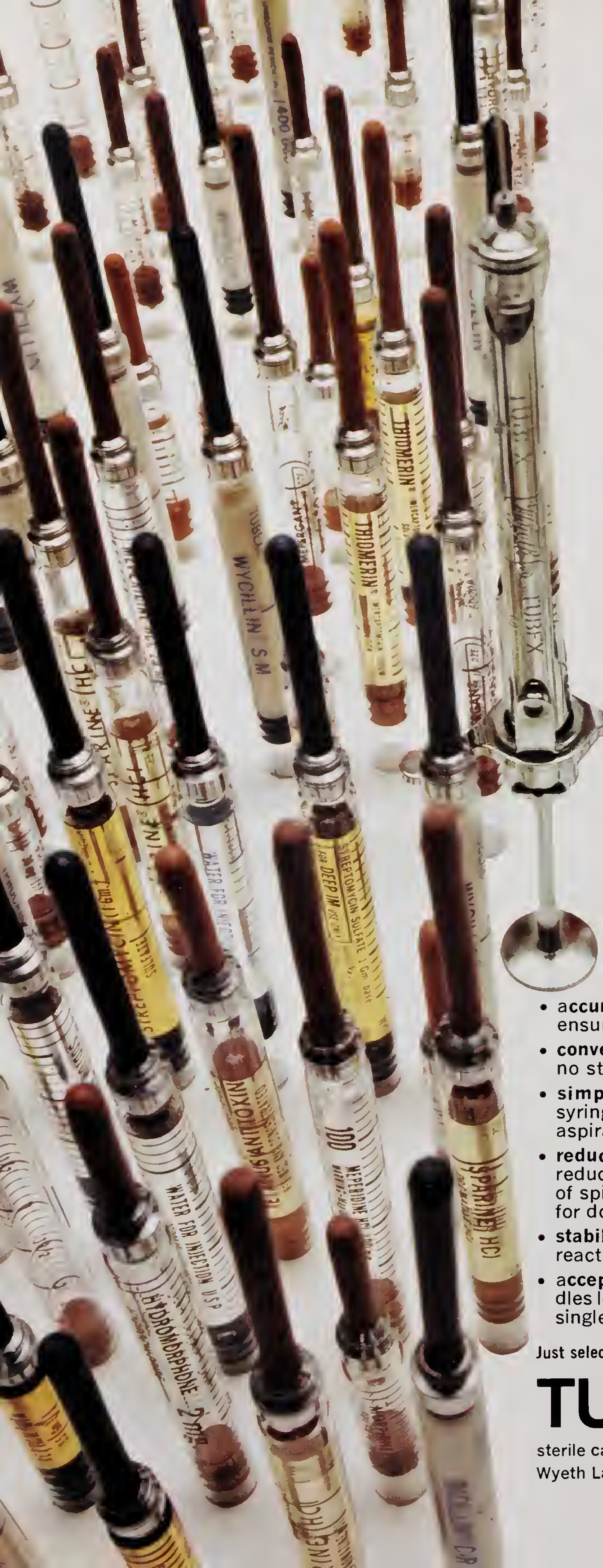
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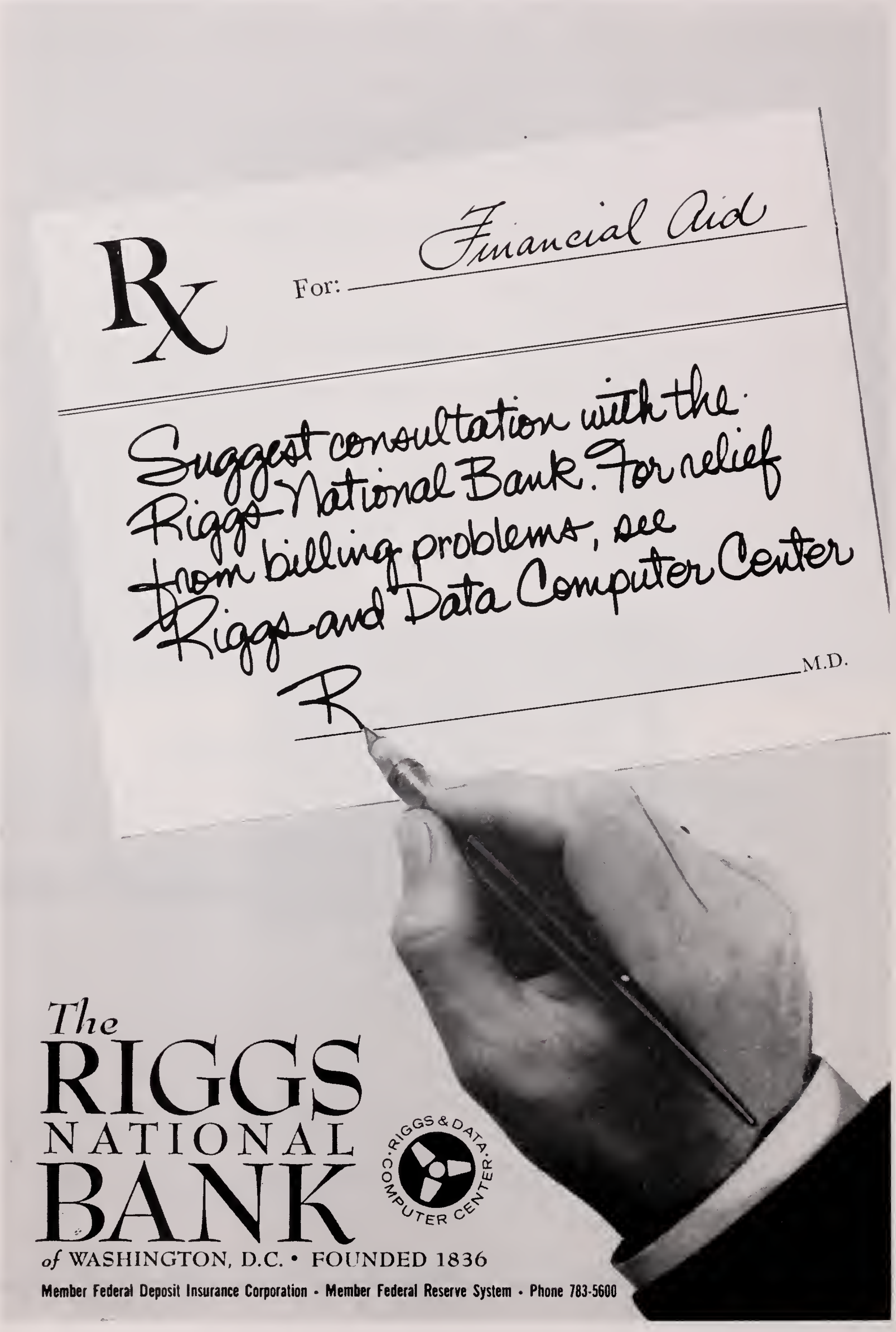

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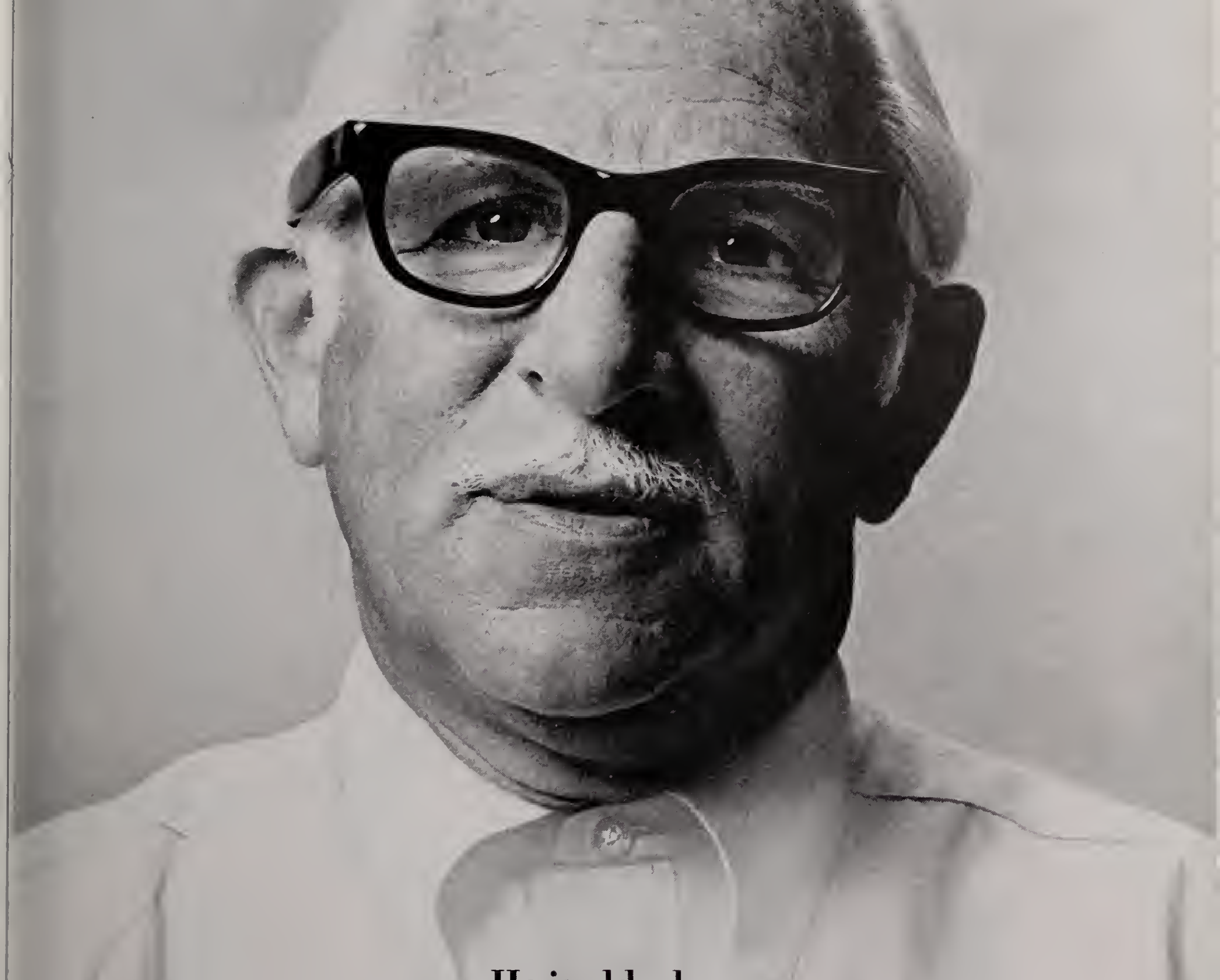

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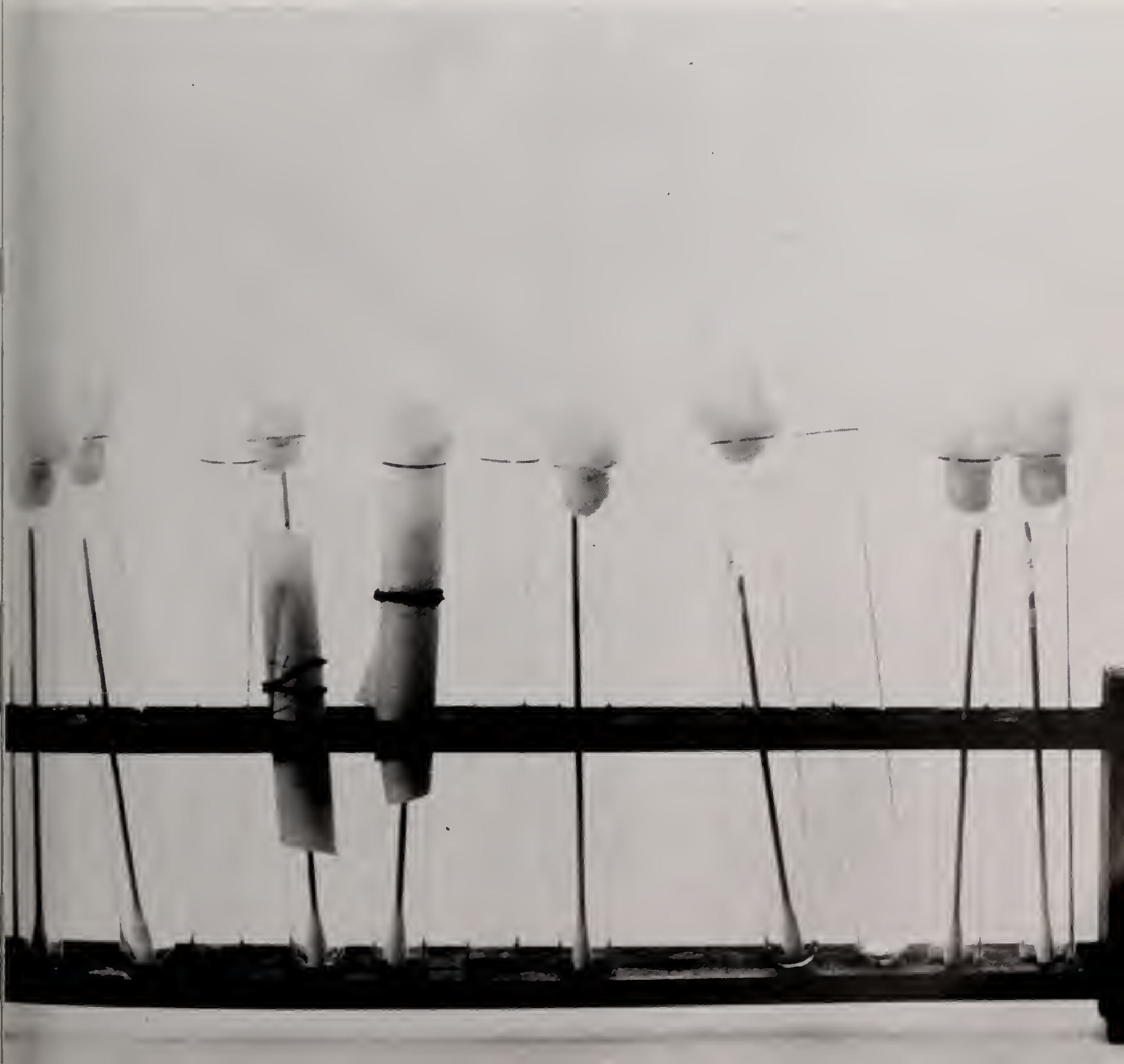

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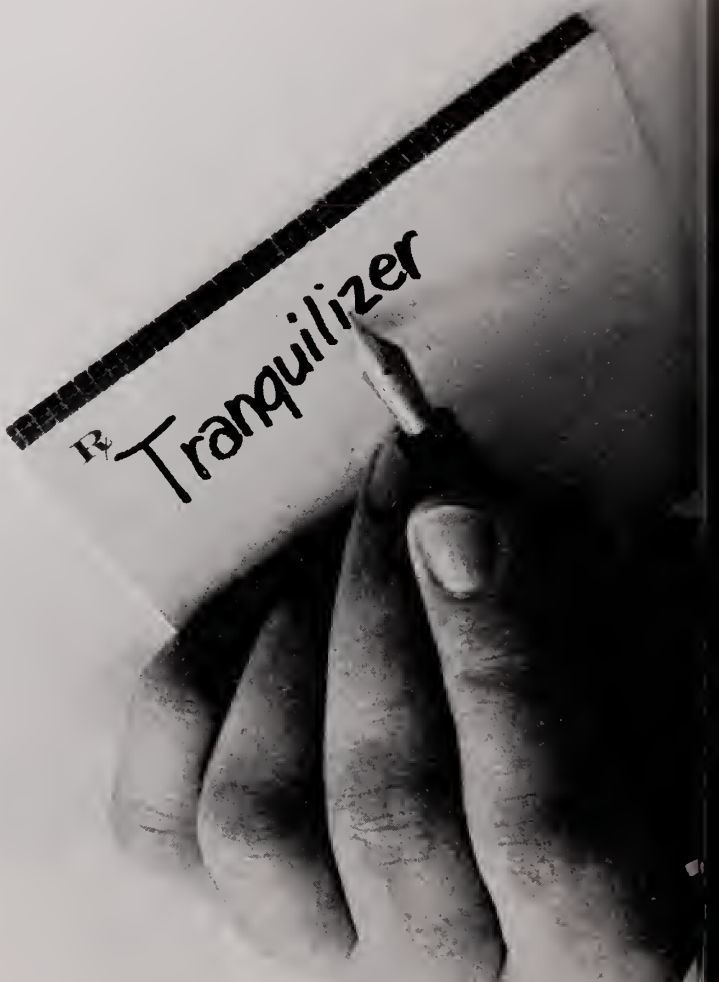

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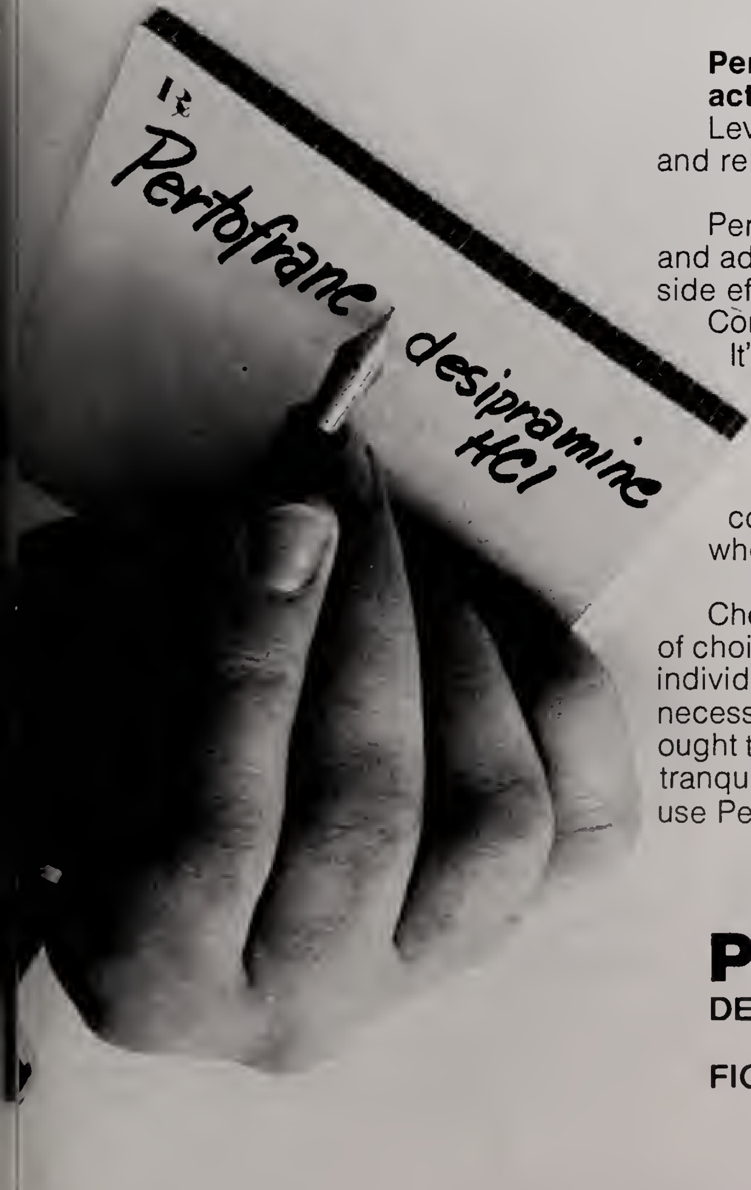

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March 17–19: American Academy of Allergy. Americana Hotel, Bal Harbour, Fla. Address: Mr. James O. Kelly, Executive Secretary, 756 North Milwaukee Street, Milwaukee, Wis. 53202.

March 27–29: Southern Society of Anesthesiologists. Marriott Motor Hotel, Atlanta, Ga. Address: Dr. Richard G. Zepernick, Mercy Hospital, New Orleans, La. 70119.

March 28–29: Third National Congress on the Socio-Economics of Health Care, sponsored by the AMA Council on Medical Service and Division of Health Service. Palmer House, Chicago. Address: Mr. J. E. Gartland, Secretary, AMA Council on Medical Service, 535 North Dearborn Street, Chicago, Ill. 60610.

April 9–11: Medical & Chirurgical Faculty of the State of Maryland. The Alcazar, Baltimore. Address: Mr. John Sargeant, Executive Secretary, 1211 Cathedral Street, Baltimore, Md. 21201.

April 12–13: National Guild of Catholic Psychiatrists. Washington, D. C. Address: Dr. Peter A. Santucci, President, 4962 Hampden Lane, Bethesda, Md. 20014.

April 13–18: American Society for Experimental Pathology. Traymore Hotel, Atlantic City, N. J. Address: Dr. Ralph E. Knotti, Executive Officer, 9650 Rockville Pike, Bethesda, Md. 20014.

April 18–20: American Society of Internal Medicine. Palmer House, Chicago. Address: Mr. William R. Ramsey, Executive Director, Hearst Bldg., Third at Market, San Francisco, Calif. 94103.

April 20–25: American College of Physicians (50th Annual Session). Conrad Hilton Hotel, Chicago. Address: Dr. Edward C. Rosenow, Jr., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

April 21–22: American Society for Artificial Internal Organs. Chalfonte-Haddon Hall, Atlantic City, N. J. Address: Dr. Eugene F. Bernstein, Secretary-Treasurer, Department of Surgery, University of Minnesota Medical School, Minneapolis, Minn. 55455.

April 21–26: American Academy of Neurology. Washington Hilton, Washington. Address: Mr. Stanley A. Nelson, Executive Director, 4005 West 65th Street, Minneapolis, Minn. 55435.

April 28–May 1: American College of Obstetricians and Gynecologists. Americana Hotel, Bal Harbour, Fla. Address: Dr. Michael Newton, Director, 79 West Monroe Street, Chicago, Ill. 60603.

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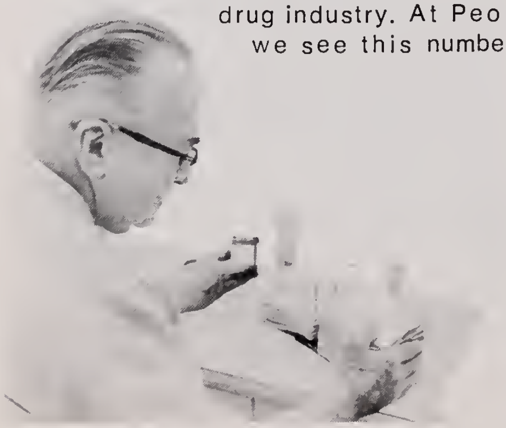

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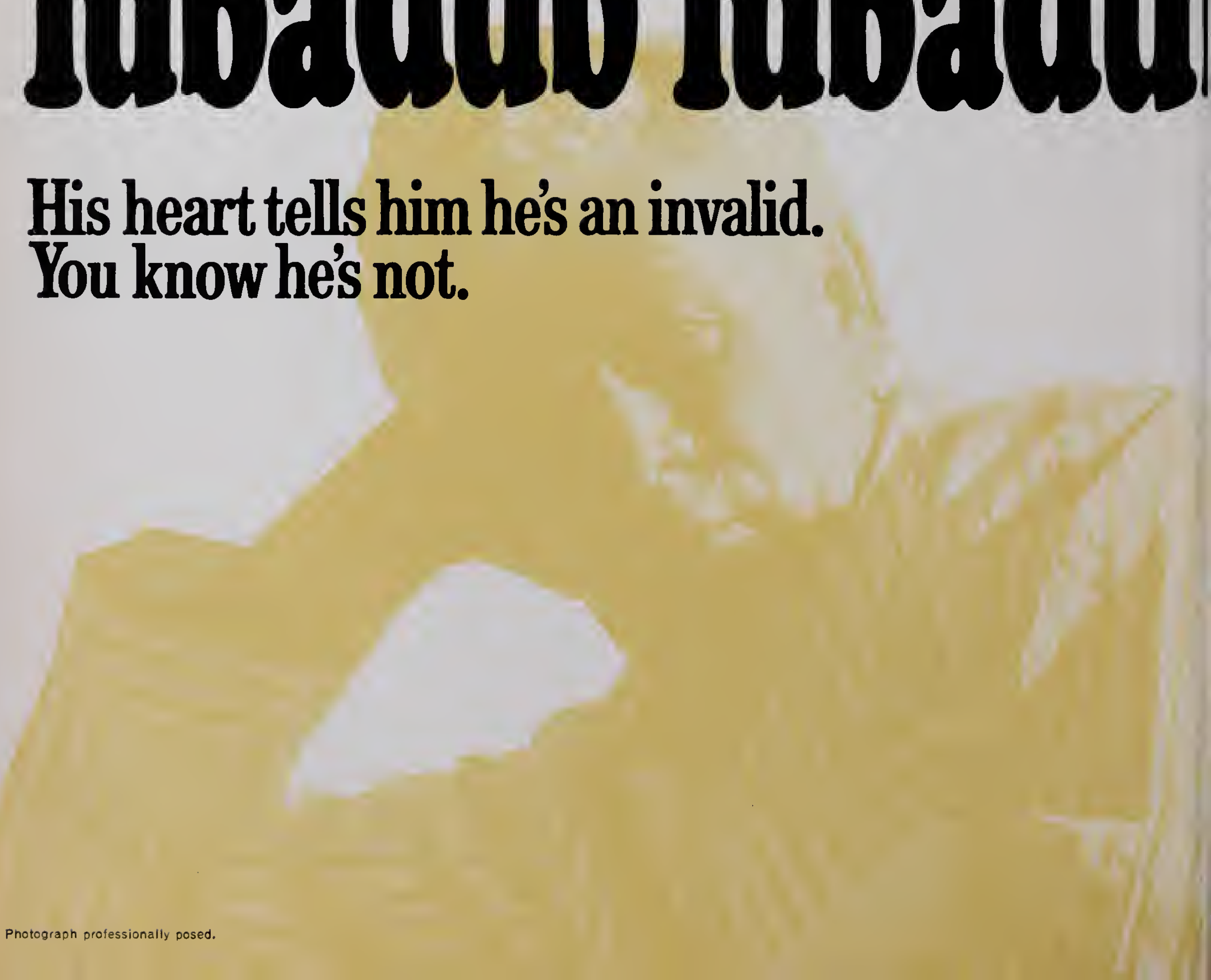

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ardiovascular symptoms, your help may
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nd perhaps prescribe Equanil (meprobamate)
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Contraindications: History of sensitivity to meprobamate.

Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

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Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

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Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

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Guancydine, a New Type of Antihypertensive Agent*

A Preliminary Communication

EDWARD D. FREIS, M.D., F.A.C.P.,† AND JAN HAMMER, M.D.‡

GUANCYDINE (1-cyano-3-*tert*-amylguanidine) is a member of several structurally related cyanoguanidines[1] which reduce the blood pressure of conscious rats.[2] The compound is unique in that it blocks the vasopressor responses to angiotension in the rat while the response to norepinephrine is reduced to a lesser degree. The drug is active orally in reducing the blood pressure of hypertensive rats and dogs in doses of 7.5 to 20 mg./Kg but does not reduce the blood pressure of normal dogs. Guancydine does not deplete catecholamines or block sympathetic vasoconstrictor reflexes in these dosages. The reduction of blood pressure in the hypertensive dog is accompanied by a decrease in total peripheral resistance with vasodilatation occurring in the cranial, mesenteric, and renal vascular beds. No evidence of toxicity or tolerance is found following chronic oral administration in dogs.[2] Because of these favorable effects in animals a trial of the drug in hypertensive patients was undertaken.

Materials and Methods

The antihypertensive response to increasing single daily oral doses of guancydine was assessed in 11 hospitalized patients. Blood pressure was measured by the auscultatory method, disappearance of sounds as the diastolic criterion being used, while heart rate was counted by auscultation over the precordium. The patients were given a normal diet, and no other antihypertensive agents were administered. The drug was administered following 3 successive measurements of the blood pressure and heart rate with the patient in the supine and erect positions. Blood pressure and heart rate were again determined in both supine and erect positions at half-hourly intervals for the next 2 hours and then at hourly intervals for the next 6 to 7 hours, and finally at 24 hours.

Following these initial trials of single daily doses 6 patients were given 375 to 500 mg. doses of guancydine twice daily for 1 to 2 weeks. Three of the 6 also received thiazide diuretics as background medication. However, at least once during the trial they reported to the clinic without taking their guancydine that morning. They were then given the drug, and the blood pressure was taken in the clinic during the next 4 hours.

Hemodynamic studies were carried out in the morning with the patient in the postabsorptive state. No other antihypertensive medications were given for at least 72 hours prior to the tests. Guancydine was administered orally following at least 2 control determinations and the hemodynamic measurements repeated at approximately 1 and 1½ hours after the drug was taken.

Cardiac output was determined by the dye-dilution method following injection of Cardio-green® into the right atrium. Dye-dilution curves were obtained from the brachial artery by means of a Gilford withdrawal pump and cuvette densitometer and a Hewlett-Packard direct writing oscillograph. Intra-arterial pressure and central venous or right atrial pressure were recorded with Statham P23Db pressure transducers. The carotid pulse, electrocardiogram, and heart sounds were recorded by methods described previously.[3]

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† Senior Medical Investigator, Veterans Administration Hospital, 50 Irving Street, N.W., Washington, D. C. 20422; Professor of Medicine, Georgetown University School of Medicine.

‡ Senior Research Fellow, Institute for Cardiovascular Research, Prague, Czechoslovakia; Visiting Scientist, Cardiovascular Research Laboratory, Georgetown University School of Medicine, Washington, D. C. 20007.

The right atrium was catheterized with a 36-inch length of vinyl tubing, 0.028 inch interior diameter, threaded through a 16-gauge thin-walled needle inserted into an antecubital vein. The catheter usually was inserted into the right ventricle as shown by pressure recordings and then was gradually withdrawn into the right atrium where it remained for the duration of the study. The brachial artery was cannulated with a Teflon® Longdwel needle. Patients were kept in the supine position throughout the experimental procedure. The ejection period and pre-ejection period were determined from simultaneous recordings of the electrocardiogram, heart sounds, and the externally recorded carotid pulse wave.[4]

The Valsalva maneuver was carried out by asking the patient to blow forcefully into a closed tube for a period of 10 seconds. Brachial intra-arterial pressure was recorded continuously before, during, and after the maneuver. The cold-pressor test was performed by immersing the patient's hand in ice water for a period of 1 minute.

Forearm blood flow was measured by venous occlusion plethysmograph with a mercury in rubber resistance gauge.[5] The hand was excluded by an arterial cuff around the wrist. The blood pressure was taken in the opposite arm using the auscultatory method. Determinations of cardiac output and of forearm blood flow were carried out in the same patients but on separate days.

Results

Effect of single oral doses. Following single oral doses of guancydine an antihypertensive effect began as early as ½ hour, and peak effect was obtained 1 to 3 hours after the drug was taken (table 1, figure 1). The duration of the antihypertensive effect varied between 4 and 8 hours.

Reduction of blood pressure was seen with all doses between 250 and 750 mg., but the fall was greater with the higher doses (table 1). The decrease was somewhat greater in the orthostatic position, but the degree of orthostatic hypotension was not prominent as compared to agents which produce sympathetic blockade such as guanethidine. Heart rate increased moderately in both the supine and erect positions (table 1 and figure 1).

Effect of continuous oral doses. Six patients received guancydine twice daily orally for periods of 1 to 2 weeks. The doses varied between 375 and 500 mg. daily. Blood pressure responses were followed either by recordings in the home or by observing the patients in the clinic for 3 hours after a dose of the drug. No evidence of tolerance was observed. After 1 to 2 weeks of treatment the patients continued to show an antihypertensive response comparable to that obtained on their initial doses. There also was no evidence of cumulation, the blood pressure returning toward or to pretreatment values by 12 hours after each dose.

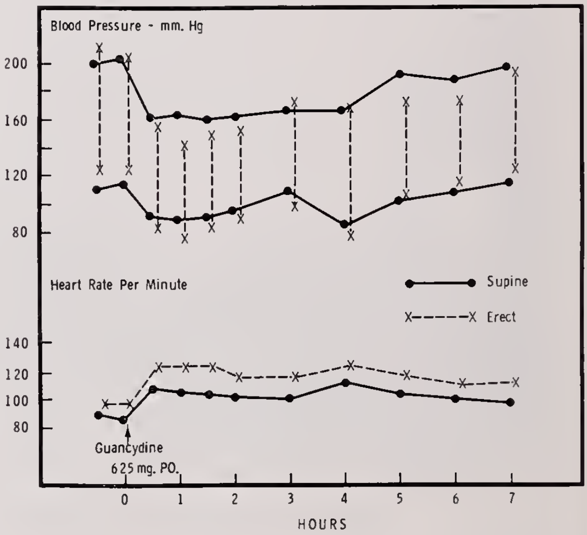

FIG. 1. Effect of oral guancydine on blood pressure and heart rate in the supine and orthostatic positions in a 42-year-old man with essential hypertension.

TABLE 1: Responses to Single Oral Doses of Guancydine

Dose mg.	Pts No.	Blood Pressure—mm. Hg: Supine Control Mean and S.D.	Blood Pressure—mm. Hg: Supine Change Mean and S.D.	Blood Pressure—mm. Hg: Erect Change Mean and S.D.	Heart Rate—per min.: Supine Control Mean and S.D.	Heart Rate—per min.: Supine Change Mean and S.D.	Heart Rate—per min.: Erect Change Mean and S.D.
250	11	154/98 ± 28/14	−17/12 ± 13/7	−21/17 ± 12/5	76.2 ± 9.4	+6.9 ± 7.6	+9.9 ± 8.7
500	9	164/102 ± 39/18	−25/17 ± 20/14	−34/26 ± 18/10	72.3 ± 9.7	+20.0 ± 14.8	+16.6 ± 11.0
625	6	164/103 ± 27/16	−39/26 ± 16/10	−58/42 ± 15/19	74.3 ± 15.2	+14.3 ± 11.7	+31.2 ± 10.2
750	4	154/94	−28/22	−33/31	77.5	+18.5	+12.0

Three of the patients also received guancydine with thiazide diuretics for periods of 3 days to 2 weeks, and the usual thiazide-induced enhancement of antihypertensive effect was observed.

However, no prolongation of action was obtained. These results indicated that while continuous dosage was well tolerated the duration of action required dosage intervals of 6 or 8 hours in order to obtain a continuous antihypertensive effect.

Hemodynamic effects. Changes in cardiac output following guancydine were determined in 5 patients. Two determinations were made in the control period and the results averaged. Determinations also were made 1 and 1½ hours after oral doses of 625 to 750 mg. of guancydine, the average changes from the control of the 2 experimental determinations being shown in table 2.

TABLE 2: Hemodynamic Changes Following Oral Guancydine

Pt	Dose mg.	Cardiac Output—L/min.		Heart Rate per min.		MAP—mm. Hg		TPR—dynes sec. cm.$^{-5}$		Central Venous Pressure —mm. Hg	
		Control	Change	Control	Change	Control	Change	Control	Change	Control	Change
1	625	8.0	+4.2	84	+12	143	−55	1420	−681	8.0	−4.5
2	750	3.4	+1.9	68	+6	112	−52	2628	−1716	4.0	−1.0
3	750	4.8	+2.5	70	+6	104	−3	1721	−615	2.0	−0.5
4	625	4.9	+3.3	62	0	135	−15	2212	−1042	10.5	−1.5
5	625	4.7	+1.8	64	+4	106	−6	1804	−574	4.0	−1.0
Mean		5.1	+2.7	69	+6	120	−26	1957	−926	5.9	−1.9

Mean arterial pressure fell slightly in 2, moderately in 1, and markedly in 2 patients, the average fall being 26 mm. Hg. Cardiac output increased in all patients, the average increase being 2.7 L/min. (+53 per cent). Heart rate rose slightly, with the average increase 8.6 (range 0 to 12) beats per minute, while stroke volume increased in all patients from an average of 71.1 ml. in the control to 106.8 ml. after the drug, a change of +50 per cent. Greater myocardial contractility after guancydine was indicated by significant shortening of the pre-ejection period (corrected for heart-rate change)[5] as compared to the ejection-time index. The corrected pre-ejection period decreased in all subjects, the average changes being −8.0 per cent, whereas ejection-time index was not consistently shortened, the average change being −1.5 per cent. Total peripheral resistance fell to normal levels in all patients. Mean right-atrial pressure fell slightly but consistently from an average of 5.9 to 4.0 mm. Hg.

Forearm blood flows measured in the same patients increased, the average rise being 73 per cent (range 37 to 112 per cent). At the same time the mean arterial pressure fell 24 per cent (range 12 to 33 per cent) and heart rate increased, the average rise being 20 per cent.

Sympathetic vasoconstrictor responses. At the time of peak antihypertensive effect following oral doses of 675 to 750 mg. of guancydine the overshoot of blood pressure following the Valsalva maneuver was unaffected in 2 patients and slightly to moderately reduced in 3 other patients. The average overshoot of mean blood pressure during the control was 25.9 per cent of the basal value and after guancydine 18.8 per cent. Complete blockade was not obtained in any of the patients.

The response to the cold-pressor test in the same patients was moderately reduced in 3 and unaffected in 2 patients. The average response before guancydine was a peak rise of 20.5 per cent of mean blood pressure above the basal level, and after guancydine there was a rise of 16.5 per cent.

Side-effects and toxicity. In the 11 patients given 1 oral dose daily of guancydine 4 complained of dizziness on standing. However, other patients exhibiting a similar or greater fall of blood pressure did not notice any orthostatic faintness. Two patients complained of slight headache, 1 of palpitation, and 1 of a burning sensation in the epigastrium.

One patient placed on continuous twice daily doses complained of hallucinations, while another patient with malignant hypertension and uremia developed hyperexcitability and disorientation during the antihypertensive action of the drug. Both of these patients were known to have had emotional disturbances in the past. Since none of the other patients complained of mental disturbances it is not certain that the above psychic reactions resulted directly from the action of guancydine. Assessment of subjective side-effects also was complicated by the fact that all patients knew that they were receiving a new drug and some were apprehensive as to possible harmful effects.

There were no significant changes in blood urea nitrogen, serum creatinine, fasting blood sugar, alkaline phosphatase, SGPT, or SGOT. The hematocrit or white blood cell count were similarly unaffected. The electrocardiogram showed no significant changes except for slight sinus tachycardia. Four patients exhibited a trace of albumin in the urine after guancydine but with no changes in the urinary sediment or in other tests of renal function.

Discussion

Guancydine appears to differ from other antihypertensive agents. The rise in cardiac output and forearm blood flow and negligible inhibition of sympathetic vasoconstrictor reflexes do not occur with adrenergic blocking drugs such as guanethidine, alpha methyldopa, and reserpine. Guancydine resembles hydralazine more closely than any other commonly used antihypertensive agent, since both drugs increase cardiac output[6] and only minimally depress sympathetic vasoconstrictor responses.[7] However, hydralazine does not increase forearm blood flow, and it raises rather than lowers right atrial pressure.[6] Subjectively, the palpitation and severe headache commonly experienced after single large doses of hydralazine were not conspicuous after guancydine. The latter drug also appears to have a more potent antihypertensive effect. One patient with malignant hypertension showed no response to 50 mg. of hydralazine plus 500 mg. of alpha methyldopa 4 times daily but exhibited a considerable antihypertensive effect following guancydine. Indeed, all patients tested with guancydine exhibited a definite antihypertensive response after doses of 500 to 750 mg.

The clinical experience with guancydine still is too limited to determine its practical place as an antihypertensive agent. However, its potency, freedom from sympathetic blocking side-effects, lack of tolerance, and apparently unique mode of action indicate further trial of the drug both alone and in combination with such agents as the thiazides or reserpine.

Summary

Guancydine, a cyanoguanidine derivative, reduces the blood pressure of hypertensive patients following oral doses of 250 to 750 mg. The reduction of blood pressure is accompanied by an increase in cardiac output and a marked fall in total peripheral vascular resistance. Although there is usually a slight orthostatic hypotension there is no significant inhibition of sympathetic reflex responses. Clinical trials to date, while still preliminary, indicate that the drug has considerable antihypertensive effectiveness while at the same time being relatively free from toxic side-effects or the development of tolerance.

The authors wish to thank Mrs. Patricia Burke, R.N., and Mr. Joseph C. Strong for valuable technical assistance. They are also indebted to Hugh Macdonald, M.D., of Lederle Laboratories, for the supplies of oral guancydine used in this study.

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A Possible Unifying Principle in the Chemotherapy of Certain Protozoal Diseases and of Leukemia*

W. R. JONDORF, Ph.D., A.R.I.C.†

ON THE BASIS of studying the symptoms of amebiasis and of African trypanosomiasis and the chemotherapeutic agents available for the relief of these symptoms, it is argued that the available drugs might be acting as folic-acid antagonists. The arguments have particular reference to the various arsenic-containing chemotherapeutic agents since melarsoprol is more effective than melarsen oxide in the treatment of African trypanosomiasis. If it is accepted that certain phenylarsenicals do indeed act as anti-folates, the proof of this particular mode of action of such compounds would lie in their effective application either individually or as components of combination chemotherapy in the treatment of leukemias, where anti-folate agents such as Aminopterin® and methotrexate have been used successfully in prolonging life. The antifolate role of various categories of chemotherapeutic agents in the treatment of African trypanosomiasis would be consistent with the need of trypanosomes for 2 very different kinds of host for the completion of their life cycles. It remains to be determined whether arsenic-containing compounds more closely resembling the components of the folic acid molecule will turn out to be more powerful chemotherapeutic agents than melarsoprol against protozoa and to have greater potential against certain forms of leukemia.

Amebiasis Symptoms and Chemotherapy

Full descriptions of the variable nature of the disease brought about by infections with *Entamoeba histolytica* have recently appeared.[1, 2] In severe cases of intestinal amebiasis extensive involvement of the colon leading to massive destruction of the mucosa may occur. Invasion of the submucosa may be followed by entry of *E. histolytica* into the liver via the portal vein and subsequent development of amebic hepatitis or liver abscess. The effectiveness of chemotherapeutic agents depends not only on the location of the lesions produced by the parasite but on the elimination of the parasite from symptom-free carriers. The most effective compounds[1, 3, 4] can be grouped according to their chemical types as follows: (a) derivatives of quinoline and isoquinoline (figure 1), (b) derivatives of phenylarsonic acid (figure 1), and (c) antibiotics.

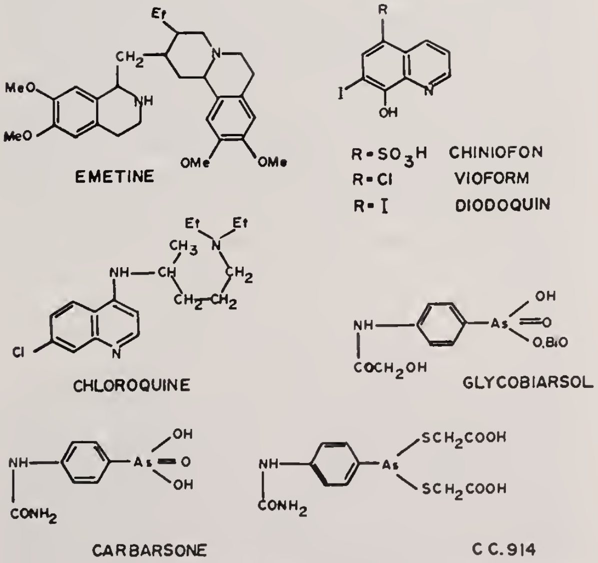

FIG. 1. Some drugs effective in the treatment of amebiasis.

It is thought that of the compounds of "a" type, emetine acts by interfering with the multiplication of the nonencysted form of the parasite.[4] It has been shown that under certain circumstances emetine inhibits protein synthesis in certain mammalian cells by interfering with the transfer-RNA reaction.[5] It would be interesting to know whether this is the mechanism of action of this drug on *E. histolytica*. The effectiveness of chloroquine may depend on its interaction with nucleic acids and nucleoprotein[6] or on its inhibiting effect on phosphate uptake into DNA or RNA of the protozoa.[7] The other halogenated quinoline compounds are directly amebicidal, but their mechanism of action is unknown.[4]

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† Associate Research Professor, Department of Pharmacology, George Washington University School of Medicine, Washington, D. C. 20005.

Of the arsenical compounds (type "b"), carbarsone is thought to be amebicidal by virtue of its arsenic content. Since the amebicidal activity of carbarsone in vitro is not very high and is exceeded by that of the corresponding trivalent arsenoxide, it is thought that carbarsone is first metabolized in vivo to this arsenoxide, which then reacts with SH-groups of the essential amebic enzymes and thereby exerts its effect.[4] If this explanation were correct, one could not readily account for the 10-fold greater amebicidal effectiveness in vitro and in vivo of a thio-arsenite compound such as CC914, derived from carbarsone.[8] A discussion of a possible alternative mode of antiprotozoal action of arsenic compounds will follow a consideration of agents used in the treatment of trypanosomiasis.

The use of antibiotics such as bacitracin, erythromycin, chlortetracycline, oxytetracycline, and paromomycin (type "c") in cases of amebiasis is recommended only for the treatment of intestinal infections.[1, 3] The mechanism of action of these agents is indirect and involves the elimination of symbiotic bacterial associates of *E. histolytica*, thereby depriving the amebae of essential metabolites needed for their reproduction. As will be discussed later, there is reason to believe that one of the essential metabolites involved may be folic acid.

African Trypanosomiasis

The characteristic features of infections with *Trypanosoma rhodesiense* and *T. gambiense* have been described recently.[1, 2, 9] The trypanosomes, which undergo cyclical development in various species of the genus Glossina, are transmitted by these flies to man, where they produce a chronic disease involving inflammation of the lymph nodes and enlargement of the spleen. The liver may be similarly affected. In trypanosome infections the abortion rate is increased. The second stage of the disease is marked by the development of central nervous system involvement, characterized by trypanosomal invasion of the cerebrospinal fluid and symptoms of meningoencephalitis and meningomyelitis, followed in the most severe cases by coma and death.

The chemotherapy of African trypanosomiasis has been the subject of a number of recent reviews.[9-13] In the treatment of the disease in its early stages, prior to involvement of the central nervous system, suramin and pentamidine are the drugs of choice (figure 2).

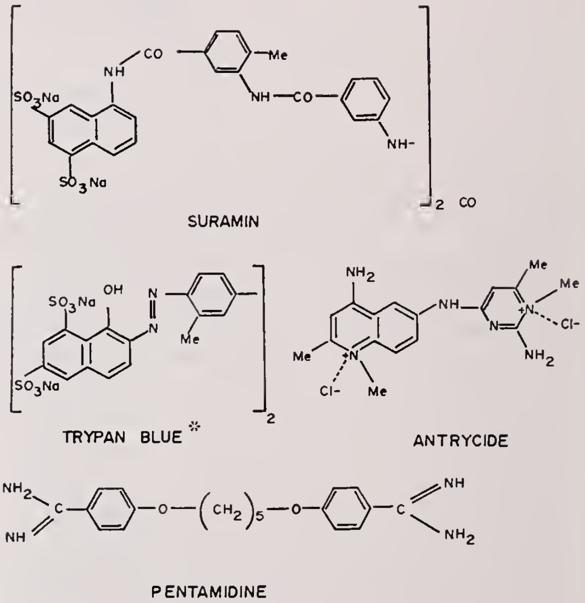

FIG. 2. Some drugs used in the chemotherapy of African trypanosomiasis.

Suramin [14] was developed from the earlier discoveries of the trypanocidal action of trypan red[15] and trypan blue.[16] Suramin combines with plasma proteins, but its mechanism of action is obscure.[11] However, some workers believe that the drug is gradually released into the blood stream from its plasma protein-complex in amounts sufficient to inactivate vital trypanosomal enzymes.[17]

Pentamidine, one of a number of related diamidines,[10, 11] is used clinically in the early stages of trypanosomiasis[1] and prophylactically, but the mechanism of action is unknown.[9, 11] The drug is stored in body tissues for months, and this is thought to be the most important factor in its use as a prophylactic agent.[13]

Antrycide[18] is widely used to cure and protect cattle from trypanosomal infection.[11, 12] With regard to its mechanism of action, it has been shown in experimental animals that the reticulo-endothelial system plays an important part in the chemotherapeutic effectiveness of this[19] and other drugs,[20] since splenectomy can reduce their trypanocidal activity. It has also been demonstrated that antrycide inhibits nucleic acid synthesis in certain strains of trypanosomes.[21, 22]

Arsenic-containing Compounds in the Treatment of African Trypanosomiasis

In the later stages of the disease arsenicals (figure 3) are the most important agents in the chemotherapy of trypanosomiasis,[13] but one has to differentiate between drugs that are considered clinically useful today[1] and others that have shown trypanocidal activity but do not necessarily have the required margin of safety.[10, 11, 23, 24] The parent compound which stimulated the research into the trypanocidal activity of phenyl-arsenicals is atoxyl[25, 26] with the structure shown in figure 3. A derivative of this, tryparsamide,[27] is one of the drugs still used. Tryparsamide is reduced in the body to the active trivalent form. It penetrates the central nervous system and kills trypanosomes in the nervous tissue.

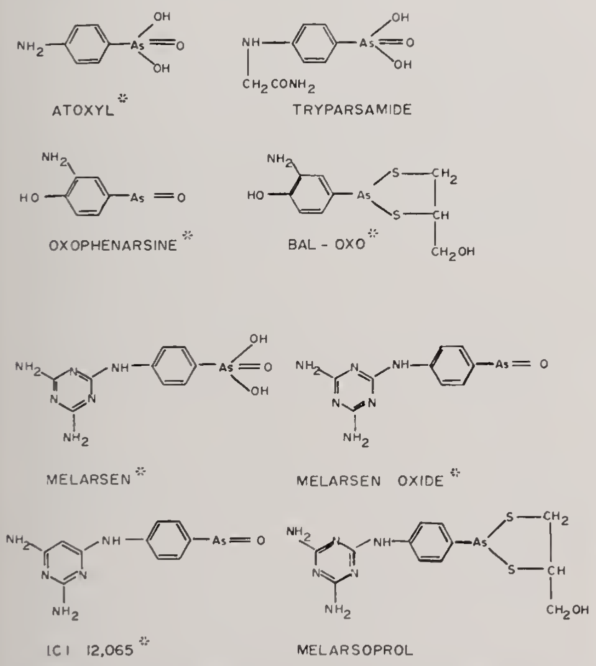

FIG. 3. Phenylarsenical compounds effective in the chemotherapy of African trypanosomiasis. (The asterisk indicates that compounds are not currently in use but are of historical or theoretical interest.)

Basing his conclusions partly on the differences in trypanocidal activity exhibited by phenyl-arsenicals in vitro and in vivo, Ehrlich[28] believed that the trypanosomes had an arsenoreceptor which was sensitive only to the trivalent form of the arsenicals and that the interaction between arsenic compounds and the trypanosomes of the arsenoreceptor site occurred with specific chemical groups.[29] Later work[30, 31] indicated that the specific groups interacting with the trivalent phenyl-arsenicals were thiol-groups, and it was suggested that interaction between arsenicals and glutathione was of fundamental importance in explaining the mechanism of action of the arsenicals. Later still came the realization that arsenicals could be detoxified by interaction with dithiols[32, 33] such as BAL (British Anti-Lewisite, 2:3-dimercaptopropan-l-ol) or would interact with naturally occurring dithiols such as lipoic acid (6:8-dithio-octanoic acid), which is an essential component of bacterial pyruvate oxidation systems.[34] It was thought that, when such natural dithiols were conjugated with trivalent phenyl-arsenicals to produce stable cyclic thioarsinites, lesions would result at the molecular level by depriving the cell of essential cofactors for enzyme activity dependent on this type of dithiol[34] or on other SH-donors.[11, 23, 24]

With this historical background, it is not entirely surprising that the originally discovered trypanocidal activity of melarsen[35] should be followed up by studies with melarsen oxide[36-39] and with the product of the chemical combination of this type of arsenical with BAL[40, 41] and other dithiols.[42, 43]

Shortly after the discovery that BAL protected man and experimental animals from the toxic effects of arsenicals[32] attempts were made with some of the phenyl-arsenicals that had exhibited trypanocidal activity but were too toxic for practical use to render them less toxic by conjugation with BAL. In this way Friedheim and Vogel[44] prepared BAL-OXO (figure 3) from oxophenarsine, one of the compounds originally investigated by Ehrlich and Hata.[45] The condensation product of BAL with oxophenarsine was found to have reduced toxicity for experimental animals compared with the parent compound but still had significant trypanocidal activity. Since other aromatic arsenicals were able to react with BAL in a similar manner to produce 5-membered sulphur-containing rings without impairment of trypanocidal activity, Friedheim and Vogel[44] concluded that the BAL-derivative was either dissociated in vivo and acted essentially like the parent compound in accordance with the Ehrlich[28] and Voegtlin et al[30] arseno-receptor concepts, or alternatively, the BAL-derivative acted without dissociation in a manner not predicted by the SH-arsenoreceptor theory.

It is now well established that melarsoprol, the conjugation product of melarsen oxide with the nonenzymatic dithiol-donor, BAL, is safer and more effective in the treatment of African trypanosomiasis than either melarsen or melarsen oxide.[10] By analogy, the related trypanocidal compound I.C.I.-12,065[46] might be made less toxic and more active by condensation with BAL.

On comparing the 2-dimensional projection of the formula of melarsoprol (figure 3) with that of folic acid (figure 4) certain similarities become apparent.

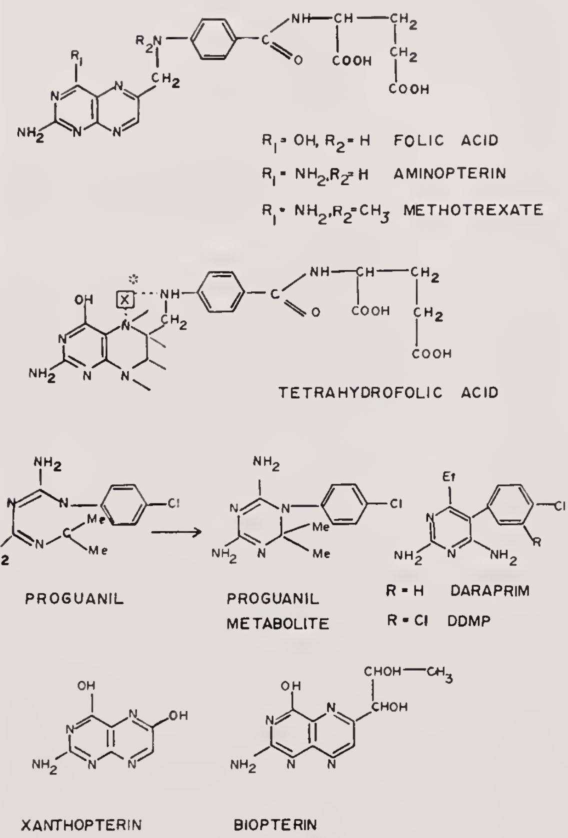

FIG. 4. Folic acid, folic-acid derivatives and antagonists. (☒ represents 'single-carbon unit' carried by tetrahydrofolic acid.)

Folic Acid, and Folic Acid Antagonists

Folic acid (pteroylmonoglutamic acid), itself derived from various conjugated precursors,[47] is enzymatically reduced in vivo to dihydrofolic acid and to tetrahydrofolic acid (THFA). The latter is a co-enzyme acting as an acceptor for various single-carbon units (designated by X), as shown in figure 4. The transfer of various single-carbon units (such as —CHO, —CH=NH) mediated by THFA constitutes one of the fundamental biosynthetic pathways in interconversions among a number of amino acids and for the de novo production of purines and pyrimidine nucleotide precursors of DNA.[48-52]

The discovery of the antileukemic activity of aminopterin, a folic-acid analogue, by Farber et al[53] introduced folic-acid antagonists as a chemotherapeutic class of compounds. It was soon realized that aminopterin blocked the reduction of folic acid to THFA.[54] A similar mechanism operates for a number of other structural analogues of folic acid[50, 55] which are considered to bind irreversibly to folic acid reductase in the tissues,[56] thereby blocking the THFA-dependent thymidylic-acid synthesis leading to DNA-synthesis and cell division.[49, 55] It is noteworthy that neither aminopterin nor methotrexate cross the blood-brain barrier, and these agents are only effective in cases of neurologic involvement in leukemia when injected intrathecally.[50, 57-60]

A number of antiprotozoal agents are now recognized as having antifolate activity (figure 4), although at first sight the structural resemblance to folic acid is slight compared with the folic-acid antagonists just discussed.

Proguanil (chlorguanide, Paludrine®) was found to have antiprotozoal (antimalarial) activity,[61] but the active compound appears to be a triazine-ring containing metabolite formed in vivo.[62, 63] The parent compound and the metabolite are shown in figure 4. It has been shown that the metabolite of proguanil enters the parasitic cell and there inhibits the reduction of folic acid to THFA.[64] It has also been shown in a protozoal system that the triazine metabolite of proguanil (and Daraprim®, to be discussed next) specifically inhibits the incorporation of P^{32}-labeled phosphate into DNA.[7]

Daraprim (pyrimethamine) was one of a number of 2:4-diaminopyrimidines shown by Hitchings et al[65] to be competitive antagonists of folic and folinic acids in the growth of *Lactobacillus casei*. The structural similarities between Daraprim (figure 4) and the metabolite of proguanil led to the realization that this compound had antimalarial[66, 67, 68] as well as antifolate activity.[66, 68, 69] Because the amino analogues of folic acid inhibit the growth of leukemias, Clarke et al[70] tested some of the diaminopyrimidine compounds for their influence on mouse tumors and found that DDMP (figure 4) was effective against Sarcoma-180. It was also found that DDMP inhibited the growth of leukemia,[71] but in man both DDMP and Daraprim produced toxic effects similar to aminopterin.[72, 73]

Could melarsoprol be acting as a folic-acid antagonist?

There are certain unmistakable resemblances structurally between melarsoprol and folic acid on the one hand, and between melarsoprol and proguanil and Daraprim on the other (figures 3 and 4). The antitrypanosomal action of melarsoprol does not appear to be based on the antagonism toward enzymatic SH-groups vital for the continued functioning of the trypanosomes. By analogy with proguanil and Daraprim, one ought to test melarsoprol in a folic acid reductase system[54, 69] and against some strains of experimental[74] or human leukemia[58, 60] known to be sensitive to folic-acid antagonists.

On theoretical grounds one could predict that if melarsoprol exhibited any antifolate activity it ought to be more effective as an antileukemic agent than either aminopterin or methotrexate because it crosses the blood-brain barrier; hence its application in the later stages of African trypanosomiasis where central nervous system involvement predicates the use of drugs capable of transmeningeal diffusion. The need for developing cancer chemotherapeutic agents which can cross the blood-brain barrier has been eloquently stressed by Welch.[57]

Arsenic compounds do not, at this time of writing, feature prominently in cancer chemotherapy.[24] The organic arsenicals do not appear to have been adequately tested for general carcinostatic activity in spite of an early lead that the leukocyte count could be dramatically reduced with inorganic arsenite in leukemic patients.[75] Atoxyl has been tested against mouse ascites tumor and was found to be effective in reducing the tumor mass by some antimitotic mechanism.[76] Leiter et al[77] examined the damage induced in mouse Sarcoma-37 (not sensitive to folic-acid antagonists) by a number of trivalent and pentavalent phenylarsenicals, including some of the amebicidal and trypanocidal compounds discussed here, the formulae of which are shown in figures 1 and 3. Tumor damage was induced by trivalent phenylarsenicals such as oxophenarsine, melarsen oxide, and BAL-OXO, but the minimum effective dose with these and other active compounds was equal to the maximum tolerated dose under the conditions of the experiments. More satisfactory results might have been obtained by these workers had it been realized that in the treatment of amebiasis or of trypanosomiasis with arsenicals it is necessary to give a course of therapy at tolerated doses lasting days or even weeks rather than 1 heroic dose.[2] Nonetheless, it appears to have been established that phenylarsenicals can exhibit antitumor activity and differential toxicities for tumor-bearing and nontumor-bearing experimental animals.[78, 79]

It remains to be determined whether the most effective phenylarsenical trypanocidal agents (figure 3) have some antifolate activity in appropriate systems in vitro and can be shown to be active against antifolate-sensitive leukemias in vivo. Of the nonarsenical trypanocides (figure 2) the diamidines have been found to be synergistically effective in combination with other chemotherapeutic agents in the treatment of experimental leukemias in mice.[80, 81]

In considering an essential metabolite of the molecular and biochemical complexity of folic acid, it would not be surprising to find that various antagonists interfere specifically with different biochemical processes related to its synthesis,[82, 83] its interrelationship with vitamin B_{12},[47] or with metabolic pathways utilizing folic acid or tetrahydrofolic acid.[50, 51]

It may turn out that melarsoprol acts as a folic-acid antagonist in some other manner than the inhibition of folic-acid reductase. It is known that some strains of trypanosomes need not only folic acid but certain pteridine co-factors for the completion of their life cycles.[84, 85, 86] One of these co-factors is biopterin, which occurs in human urine,[87] in queen bee jelly,[88] and in a great variety of insect materials.[89] Other pteridines related to folic acid such as xanthopterin[90] and leucopterin have been isolated from insect sources and from other species of animals that undergo metamorphosis.[91, 92] Some of these unconjugated pteridines may participate as precursors in the biosynthesis of folic acid.[83] Their diamino analogues and derivatives are folic-acid antagonists,[93] acting as antiprotozoal agents by some mechanism related to that of proguanil or Daraprim. A compound like melarsoprol might interfere with the folic-acid system at the trypanosomal level in one of the several ways connected with the biosynthesis of folic acid or with the availability of pteridine co-factors for the parasite.

A Reëvaluation of Amebiasis and African Trypanosomiasis

In amebiasis the symbiotic relationship existing between the intestinal bacterial flora and the parasitic *E. histolytica* and the invasion in more severe cases of diverticula of the colon, with the resultant partial destruction of the intestinal mucosa and the involvement of the liver,[1, 2] suggest that the parasite might be competing with the host for folic acid. The drugs available for treatment are (a) various quinoline and isoquinoline derivatives, which might interfere with pteridine or folic-acid utilization by the parasite, (b) a number of derivatives of p-formimino-phenylarsonic acid which may not necessarily be reacting with protozoal SH-receptors, but instead might impair the parasitic or symbiotic bacterial utilization of folic acid by some mechanism competing perhaps with p-amino-benzoic acid,[82] and (c) antibiotics, which inhibit protein synthesis or cell division[94] in the symbiotic intestinal bacteria, thereby depriving *E. histolytica* of the folic acid produced metabolically by these bacteria, which are necessary for the completion of the reproductive cycle of the protozoal parasite.

In African trypanosomiasis, the trypanosomal parasites infect the blood stream, the lymphatic system, the spleen, the liver, and finally the central nervous system with the invasion of the cerebrospinal fluid.[1, 2] It might be that the trypanosomes are competing with the host for (preformed) folic acid. This would explain the involvement of the reticulo-endothelial system, the increased tendency to abortion in female patients,[95] and the migration of trypanosomes to the cerebrospinal fluid where folic acid is known to be concentrated.[96] The parasites, which are insect-borne, complete part of their life-cycle in the insect (flies of the genus *Glossina*), and this could be explained by the requirement for pteridines as well as folic acid for growth, since insects would be a good source for pteridines.[89, 92] Drugs available for the treatment of trypanosomiasis might interfere with trypanosomal pteridine utilization (naphthylamine and quinoline derivatives) or with folic acid dependent reactions for the biosynthesis of nucleic acid precursors (phenylarsenicals).

It is not very easy to include suramin or the diamidines in a unified scheme consistent with a biochemical explanation of trypanosomal symptoms and treatment depending on folic acid, because neither suramin nor pentamidine appear to be metabolized or otherwise bio-degraded.[11] Perhaps these compounds are bound to some circulating intrinsic factor[47] required for the utilization of folic acid. They might protect folic acid or tetrahydrofolate from utilization by the parasites.

If the explanation of the nature of protozoal diseases in terms of folic acid is correct, the protozoal parasites would be competing with the host for folic acid or for tetrahydrofolic acid, and the various categories of drugs available can be considered to act in some ways as folic-acid antagonists. The possibility then exists that currently used antiprotozoal agents can be modified or improved by consciously designing analogues more closely resembling the folic-acid molecule. This would mean that compounds could be designed to cross the blood-brain barrier in the treatment of antifolate sensitive leukemias, if the available phenylarsenical trypanocidal drugs such as melarsoprol prove to be unsatisfactory.

I want to thank Professor H. George Mandel for arousing my interest in this subject and members of the staff of the Medical School library, particularly Miss Isabella Young and Miss Kristin Scofield, for facilitating the search for some of the more elusive references. The support from Grant Nos. GM-13749 and CA-02978 from the U.S. Public Health Service is also gratefully acknowledged.

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Extended Applications of Exercise Electrocardiography*

ALDEN S. GOOCH, M.D.,† AND JOHN M. EVANS, M.D., F.A.C.P.‡

FOR OVER 25 YEARS the exercise electrocardiogram (Ex-ECG) has been used for evaluating chest pain and for the detection of latent heart disease. This adjunct to diagnosis of ischemic heart disease has been widely employed[1, 2, 3] with the "2-step" or "Master test" to provoke changes in the ST segment. More recent modifications of the Ex-ECG have been the addition of monitoring during the tests,[4, 5] imposing of higher levels of exercise,[6] and the use of various mechanical exercise devices[7, 8, 9] such as treadmills and bicycles. Although there are still some disagreements regarding standardization and interpretation of the test, there is no doubt that its value in assessing cardiac function is well established. In the past 2 years we have employed new uses of graded Ex-ECG's for evaluating heart disorders in addition to the conventional applications. These new applications of the Ex-ECG have been very helpful in certain areas of cardiology.

Methods

In the exercise laboratory a bipolar chest lead (V5 or V6) is used in recording continuously on a standard electrocardiograph while subjects walk on a 7 per cent-grade motorized treadmill (Medical Electronics). The chest leads (Beckman) were applied after careful skin preparation. This involves shaving and then rubbing with acetone each electrode site. Walking was performed for 3 minutes at each 1 MPH increment with rest periods between each increment to the comfortable tolerance of each subject (usually a submaximal test). All tests were conducted with the supervision of a physician. The only contraindications have been the presence of acute ST or T-wave changes in the resting ECG, a history of myocardial infarction within the previous 6 weeks, or a history suggesting "impending" infarction. More than 700 Ex-ECG's have been done on a wide variety of adult subjects, both with and without known heart disease.

Arrhythmias and Conduction Disturbances

There are few studies of the occurrence of arrhythmias with exercise, although there are several case reports and opinions in the literature regarding their frequency and significance.[10-15] Eighty-eight patients were studied in our laboratory to appraise cardiac arrhythmias. These were patients with a history of palpitation, transient light-headedness or syncope, or those known to have had previous arrhythmic episodes. Exercise ECG's were obtained in an attempt to induce or reproduce transient arrhythmias in order to document and analyze the cause of these symptoms. Only 2 of the 88 patients in this group, both with a previous history of syncope, developed transient arrhythmias. One developed a 4-beat run of asymptomatic nodal tachycardia, and the other

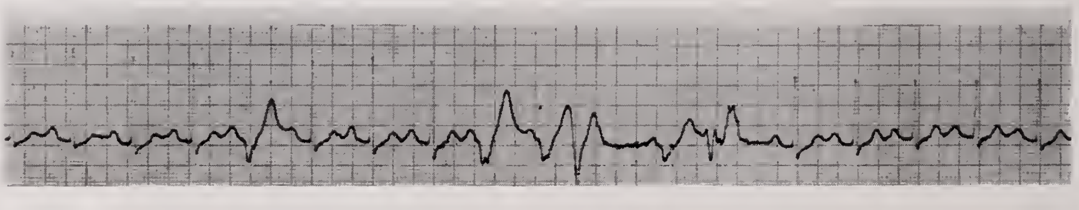

FIG. 1. Electrocardiogram of a 77-year-old man immediately following light (2 MPH for 1 min.) treadmill exercise. A transient sensation of light-headedness occurred in association with this brief run of irregular ectopic activity.

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† Assistant Professor of Medicine, Division of Cardiology, Department of Medicine, George Washington University Medical Center, 901 23rd Street, N.W., Washington, D. C. 20037.

‡ Professor of Medicine, Division of Cardiology, Department of Medicine, George Washington University Medical Center.

(figure 1) had a 4-second interval of irregular ventricular ectopic activity. The latter was associated with a transient sensation of light-headedness.

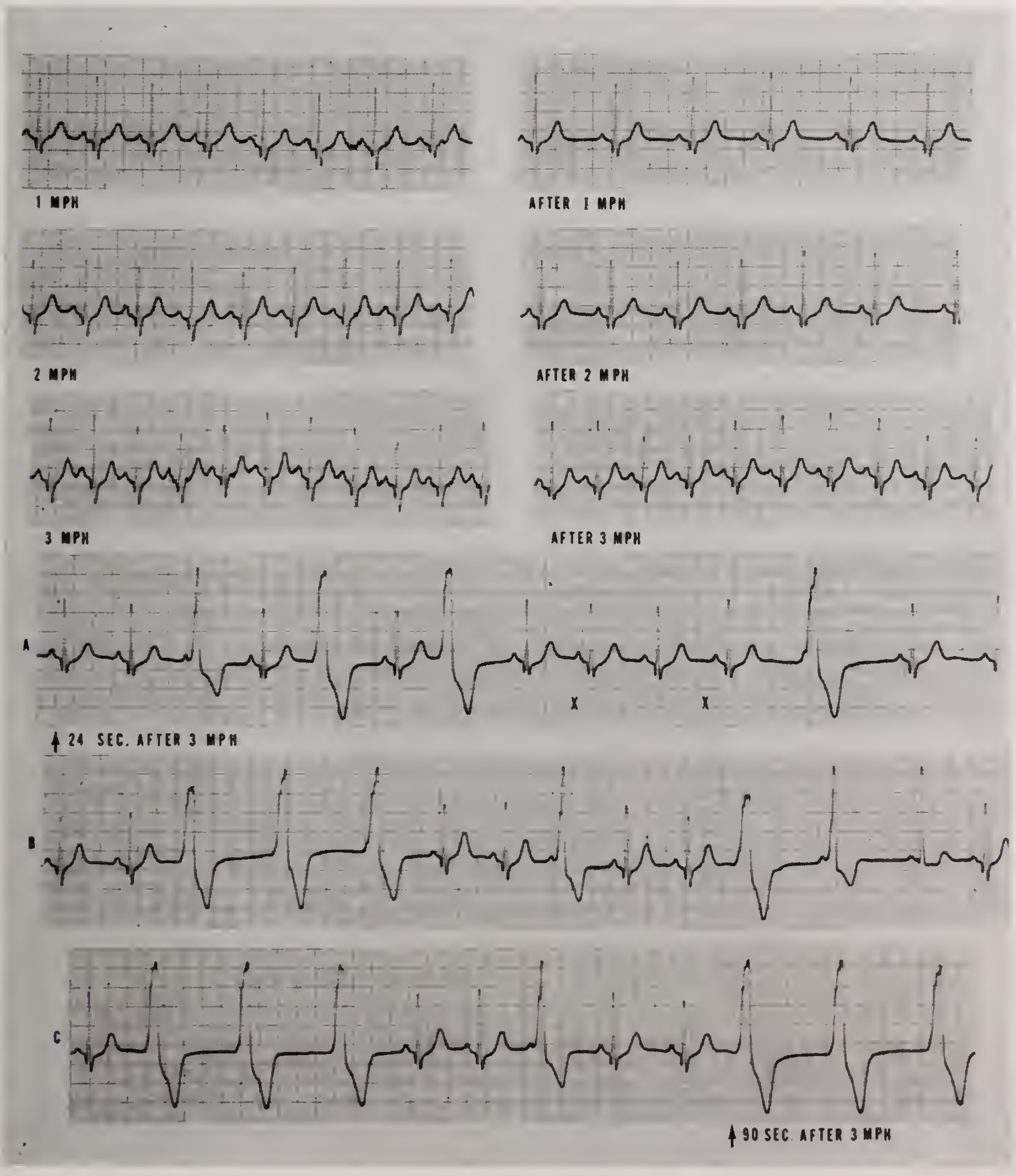

FIG. 2. Ex-ECG of a 46-year-old asymptomatic man 4 years after a myocardial infarction. The S-T segments are normal. After walking at 3 MPH a long run of ventricular parasystole appears (A, B and C) and occasional sinus pauses (1 in B, 2 in C). This arrhythmia is established gradually with a slower ectopic rate and exit blocks during the first 10 seconds (A).

Arrhythmias and conduction disturbances were unpredictable in their occurrence in 27 additional patients who had neither palpitation nor central nervous system symptoms. These disturbances were of several types and appeared during the testing of 262 people with heart disease. In subjects without heart disease, only 1 of 132 had an arrhythmia, a 3-beat episode of ventricular tachycardia.

Several of these transient arrhythmias were found to be reproducible as shown by serial Ex-ECG's. For example, a patient who had ventricular parasystole with periods of sinus pause following exercise (figure 2) was tested 3 times over a 6-month period. This 46-year-old man with a previous myocardial infarction was completely asymptomatic. Analysis of the tests (figure 3) reveals that the parasystole occurs at rest, is abolished by higher levels of exercise (heart rates greater than 110 per minute), and that the sinus pauses occur only during the phase of rapid deceleration immediately following exercise. Also, it is noteworthy that this arrhythmia had no adverse effect on this patient, is present recurrently in the presence of ordinary activities, and does not require treatment.

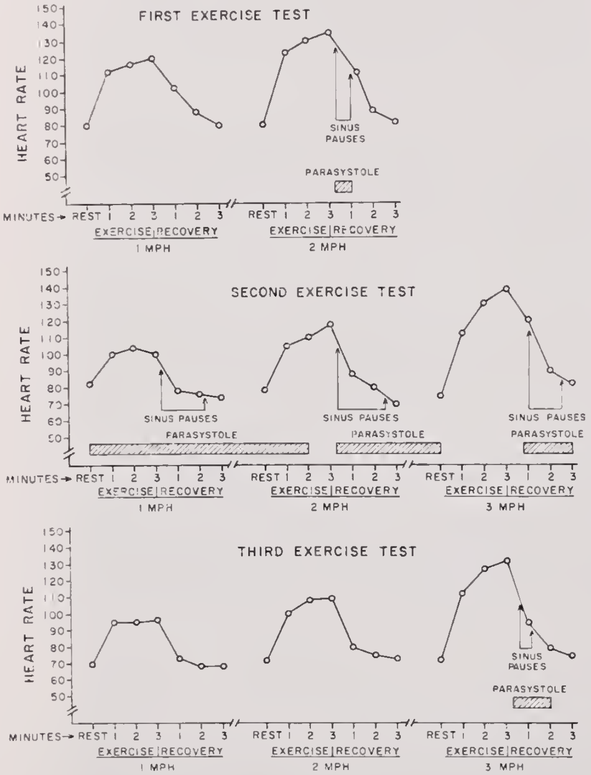

FIG. 3. Analysis of serial Ex-ECG's of same man in figure 2. These tests were conducted in a 6-month period. Exercise was interrupted every 3 minutes to promote the appearance of arrhythmias. Parasystole may be present at rest (second test), is abolished with moderate exercise, and appears during rapid deceleration of the heart rate after higher levels of exercise. Sinus pauses are seen only in the period immediately following exercise. This man remained asymptomatic during the 6-month period of observation and during the tests. He is also on a regular program of daily exercise.

Analysis of serial Ex-ECG's is a physiologic method for evoking arrhythmias and for studying their behavior as well as their identity.[1, 14] Exercise levels which exceed the usual daily habits of each patient probably should not be imposed if an arrhythmia is present at rest. An important element of safety is added by constant monitoring of the ECG during exercise.

The presence of the arrhythmia is not a contraindication to exercise tests in patients with heart disease. Submaximal Ex-ECG's are performed on patients with established arrhythmias: multiple premature beats, atrial fibrillation and flutter, A-V dissociation, all degrees of heart-block, and intraventricular conduction disturbances. Exercise tests should not be performed on these patients unless facilities for constant monitoring and a physician are available to supervise the test. Resuscitation equipment and drugs are also constantly available. Also, these patients should not exceed their comfortable tolerance for exercise. With these safeguards in mind, treadmill exercise provides a simple physiologic means of evaluating transient or established arrhythmias. This approach not only has research value but is useful for deriving information for advising patients regarding safe and adequate exercise levels.

The behavior of conduction disturbances, as influenced by heart rate, can be easily determined if the subject is able to exercise. A 45-year-old physician with asymptomatic congenital third-degree A-V block had a resting ventricular rate of 46 per minute. While walking at 4 MPH he attained a ventricular rate of 100 per minute and immediately following the exercise developed a brief period of 2-to-1 A-V block. This Ex-ECG demonstrates (1) an ability to respond appropriately to exercise by more than doubling of the heart rate in spite of complete heart-block and (2) that complete heart-block in the resting ECG does not necessarily mean that the heart-block is always "complete" and that improved A-V conduction may be achieved.

In many patients with heart disease, transient arrhythmias and conduction disturbances occur frequently and sometimes regularly. They can be induced by mild or moderate levels of exercise and usually appear during the period of walking or immediately following exertion.[1, 10] In our experience they are not often accompanied by symptoms, are not correlated with a history of palpitation, and probably require no specific treatment.

Gallop Sounds

Heart sounds normally increase in loudness with exercise, but the occurrence of certain sounds is not normal. We have added precordial auscultation to our routine of exercise-testing and with particular attention to the heart sounds in diastole. During diastole some subjects with heart disease have been shown to develop a transient ventricular gallop immediately following exercise. These gallop sounds are a sign of ventricular dysfunction and are best heard by light application of the bell of the stethoscope to the cardiac apex and/or lower left sternal border. They usually persist for 2 to 5 minutes and then disappear as rest continues and the heart rate slows. In evaluating our first 92 patients who were known to have classical angina pectoris or previous myocardial infarctions we have found transient ventricular gallops in 24. In 9 of these 24 the gallops appeared even though the usual indications of ischemia (abnormal ST changes or angina induced by exercise) were not present. We have not encountered ventricular gallops in subjects over 35 years of age who were free of heart disease.

Sawayama et al[16] using the phonocardiograph have shown similar results and conclude that analysis of the postexercise heart sounds is of value in diagnosing latent heart disease in cases with negative Ex-ECG's and in cases in which ST changes may not be applicable.

Parry and Mounsey[17] have shown that exercise can induce transient changes in gallops, both atrial and ventricular. They demonstrated an augmenting of the atrial sound in 11 hypertensive patients following mild exercise and in 1 the appearance of quadruple rhythm. We also have noted that exercise may increase the loudness of atrial gallops but have not encountered any which appeared de novo following exercise.

The Ex-ECG changes of ischemia (ST changes) cannot be interpreted in subjects with bundle-branch block, "strain" pattern, or in those taking digitalis, thiazides, or quinidine. Auscultation of these patients after exercise is particularly useful, because if a ventricular gallop is heard, abnormal ventricular function can be implied regardless of the level of exercise and the behavior of the ECG. Also, postexercise auscultation is useful for those patients who, because of disabilities, are unable to walk to levels which would be enough to promote ischemic ST changes. We have noted several of these patients who have ventricular gallops which appear after mild exercise stress, i.e., 1 MPH for 2 to 3 minutes. Long-term studies are indicated to develop prognostic implications of these auscultatory findings.

Evaluation of Exercise Tolerance

In view of the widespread interest in exercise in the management of coronary heart disease,[18–21] there is a continuing need for a simple objective procedure for evaluating an individual's capabilities. Treadmill exercise provides a relatively simple method for assessing some aspects of cardiac performance and serves as a guide to safe exercise prescriptions.[9, 22, 23, 24] (Treadmills, as well as other devices for quantitating exercise, are being employed in several centers.) The more usual methods, history-taking and standard ECG's, which may be very useful in other areas of cardiac diagnosis, are notably inadequate for estimating exercise tolerance.[9] We have found a wide range of capacity to perform walking exercise which is frequently at variance with information obtained from a detailed history. Exaggerations of daily exercise habits are easily detected by demonstrated abilities for performance on the treadmill.

It is well known that as physical fitness improves, heart rates are slower at similar exercise levels.[7, 24] This reliable rate response is very useful because it can be utilized in serial treadmill tests as an index of progress derived from regular exercise. After a patient has embarked on a program of regular exercise the effects of the program on cardiovascular response can be seen as an improvement in peak exercise levels attained and by noting the changes in heart rates at those levels. This applies to cardiacs, as well as noncardiacs, and each subject serves as his own control. We have applied treadmill exercise testing to 135 subjects with previous myocardial infarction or angina pectoris and affirm the safety and value of this procedure. Figure 3 shows that the heart-rate response to exercise is lower as the subject's exercise program continues as indicated in sequential tests performed at 3-month intervals.

Treadmill testing is also useful for evaluating exercise tolerance in noncardiac conditions. Serial testing of patients with pulmonary emphysema or with leg claudication has been used, not only as a method for quantitating exercise tolerance but also as a means of evaluating treatment regimens or progression of disease.

Following cardiac surgery, exercise tolerance and heart-rate response can easily be measured to establish objective criteria for improvement in cardiac function. The value of the Ex-ECG may be illustrated by the history of a patient following mitral commissurotomy. He had the belief that a marked improvement in symptom-free exercise levels had been attained, and he described an improvement in general well-being. However, walking at 2 MPH for 1 minute caused weakness, an exaggerated tachycardia, and frequent premature beats. It seems clear that he had enjoyed a favorable placebo effect from the surgery, and the information from the Ex-ECG was more consistent with his postoperative mitral regurgitation and heart enlargement.

Another patient, in contrast, reported a much improved exercise tolerance following her mitral commissurotomy. Two Ex-ECG's had been performed prior to surgery, and the test repeated 2 months postoperatively documented the improvement in performance.

Drug Evaluation

Exercise ECG's have been employed in drug evaluation, most frequently as a method of gauging the effect of anti-anginal agents on exercise tolerance and ST changes. This is a logical extension of the Ex-ECG as an ischemia-provoking device. Information from this type of investiga-

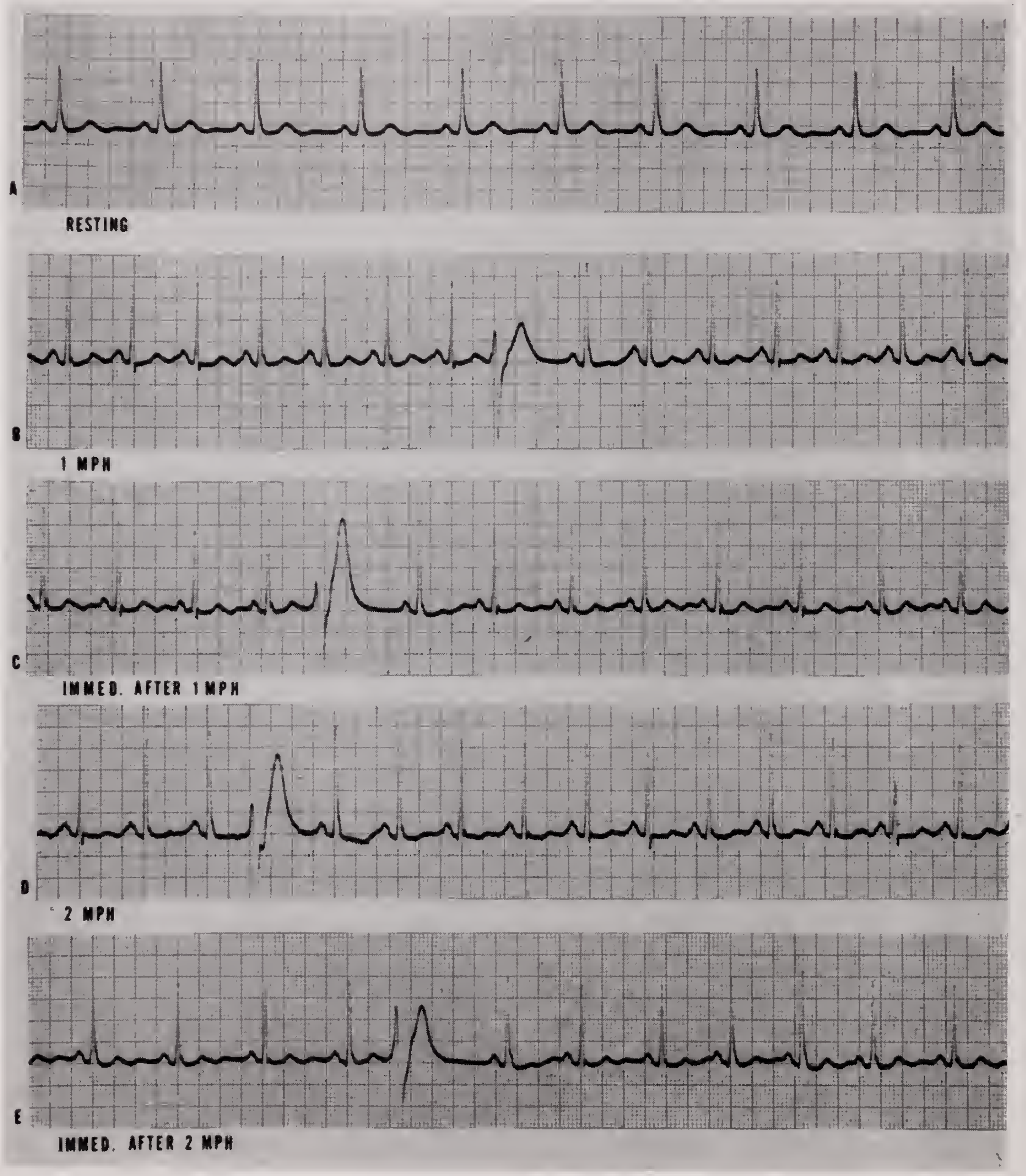

FIG. 4. Ex-ECG of a hypertensive woman during low levels of exercise. At 1 MPH (B) the PVC is followed by a beat with a lower T wave and the second beat has a large peaked P wave. In C, with a slower rate, a prominent U wave is seen, and it becomes apparent that the large P wave was really a combination of a P wave and a U wave. These are the changes of hypokalemia and are exaggerated in the beat following the PVC's. This is seen even more clearly at 2 MPH. Serum potassium was found to be 3.4 mEq./L and is attributed to thiazide diuretics.

tion, such as the synergism of propranalol and isosorbide dinitrate as described by Russek,[25] has important clinical implications.

There are other benefits, sometimes unexpected, in testing patients on various drugs who are being monitored during the Ex-ECG. One guide to the adequacy of digitalization can easily be assessed in atrial fibrillation by imposing exercise. This can be done without treadmills or any similar device. A normal resting heart rate will accelerate to very high levels if the doses of digitalis have been inadequate. This point was illustrated in a patient whose heart rate at 2 MPH rose to 188 per minute, suggesting the need for additional digitalis.

Another practical benefit has been the uncovering of hypokalemia, since exercise exaggerates the ST-T-U changes of low potassium.[26] This has been found in several of our asymptomatic hypertensive patients who have been receiving thiazide diuretics. The ECG changes have been confirmed by measurement of serum potassium in these patients, and in one the serum magnesium was also low. Hypokalemia changes may be most prominent in the ECG following a premature contraction (figure 4) with a greater depression of the T wave and elevation of the U waves.

Summary and Conclusions

It seems inevitable that new applications of established diagnostic procedures will continue to emerge. This is true of exercise electrocardiography which is itself an extension of the standard ECG. Exercise testing is now being used in conjunction with other procedures to evaluate physical fitness and cardiovascular function. Other uses, for clinical research and diagnosis, include (1) the detection and behavior of arrhythmias, (2) post-exercise auscultation for the detection of gallop sounds, and (3) the evaluation of drugs and drug-induced ECG changes. We have presented some preliminary observations on some of these applications and their clinical usefulness.

We wish to acknowledge with gratitude the technical assistance of Mrs. Dorothy McConnell in conducting the tests and the help of Mrs. Viia Lucins in the preparation of the manuscript.

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Intracranial Hodgkin's Disease Simulating Pterional Meningioma

Report of a Case*

S. KOULOURIS, M.D.,† CAPTAIN EDWARD ROBERTS LANG, USAF, MC,‡ AND JOHN L. FOX, M.D.§

WHEREAS INVOLVEMENT of the nervous system by Hodgkin's disease is well documented,[1, 2] it is clearly uncommon for this disease to present itself as an intracranial tumor localized to a discrete site.[3] This report concerns a case of Hodgkin's disease which bore a striking clinical resemblance to the pterional meningiomas illustrated by Cushing.[4] The dramatic postoperative improvement in the condition of this young man underscores the value of aggressive therapy in such a condition.

Report of Case

The patient is a 25-year-old man who was admitted to the Veterans Administration Hospital in March 1967 because of unremitting headache. One year prior he was treated at another hospital for uveitis. Six months later he noticed protrusion of his right eye, which was associated with fullness in the right side of his neck. During the 2 months preceding his last admission he had developed a marked enlargement of his right temporal region with localization of headache to this area.

He was a well-nourished, muscular man with definite right-sided nonpulsating exophthalmos without chemosis. The right temporal region appeared bulging and was firm to the touch (figure 1). The right side of the neck was diffusely enlarged but contained no discrete masses or nodes. There was no papilledema or oculomotor paresis. The remaining physical and neurologic examination was normal except for right-sided anosmia. Skull X-ray films were normal. Cervical-spine films showed a destructive lesion of the spinous process of the second cervical vertebra. A radioisotopic brain scan demonstrated a large area of increased uptake in the right frontotemporal region in both anterior and lateral views (figure 2).

A right retrograde brachial angiogram disclosed a marked displacement of the anterior cerebral artery from right to left. The middle cerebral artery was displaced medially and elevated from the floor of the middle fossa. There was medial displacement of the middle meningeal artery indicating an extradural mass. No tumor stain or abnormal vasculature was seen.

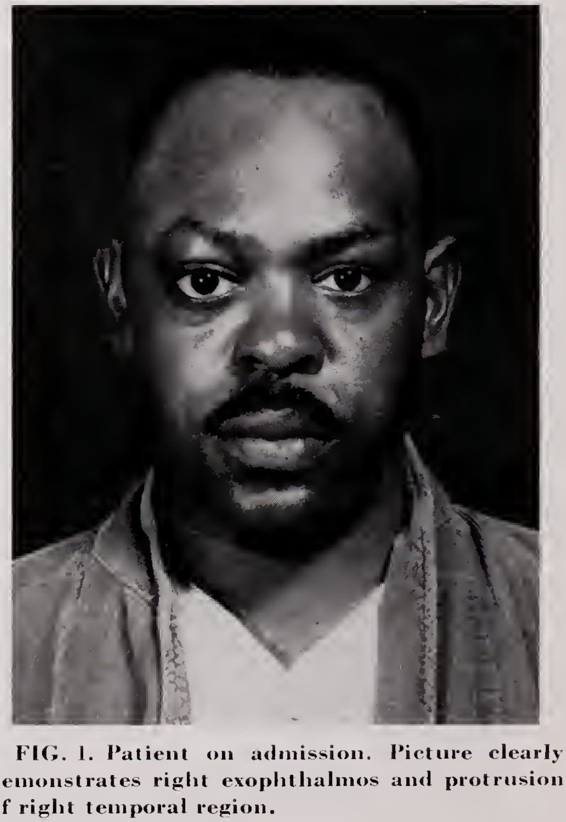

FIG. 1. Patient on admission. Picture clearly demonstrates right exophthalmos and protrusion of right temporal region.

A right frontotemporal craniotomy was performed. The bone flap was elevated with difficulty. A highly vascular tumor mass filled the frontotemporal epidural space displacing the frontal lobe medially. This mass had invaded the bone and penetrated its full thickness so that the neoplasm was adherent to the inner aspect of the temporalis muscle. We were able to remove 90 per cent of the tumor from the epidural space. The bone flap was discarded. The brain felt normal when palpated through the dura. The latter was not opened for fear of spreading tumor into the brain. The tumor histologically proved to be Hodgkin's granuloma containing typical Reed-Sternberg cells.

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* From the Neurosurgical Service of the Veterans Administration Hospital, Washington, and George Washington University School of Medicine.

† Resident in Neurological Surgery, George Washington University Hospital.

‡ Present address: Neurosurgical Service, Keesler Air Force Base Hospital, Miss. 39534.

§ Assistant Clinical Professor of Neurological Surgery, George Washington University and Georgetown University Schools of Medicine; Chief of Neurosurgery, Veterans Administration Hospital, 50 Irving Street, N.W., Washington, D. C. 20422. (Reprint requests to Dr. Fox.)

The postoperative course was uneventful. The patient was relieved of his severe headache, the exophthalmos disappeared, and he remained alert and active without a neurologic deficit. A course of radiation therapy produced rapid resolution of the mass in the right side of his neck. Upon discharge home he was asymptomatic. Subsequent radiation therapy to the right frontotemporal region is planned.

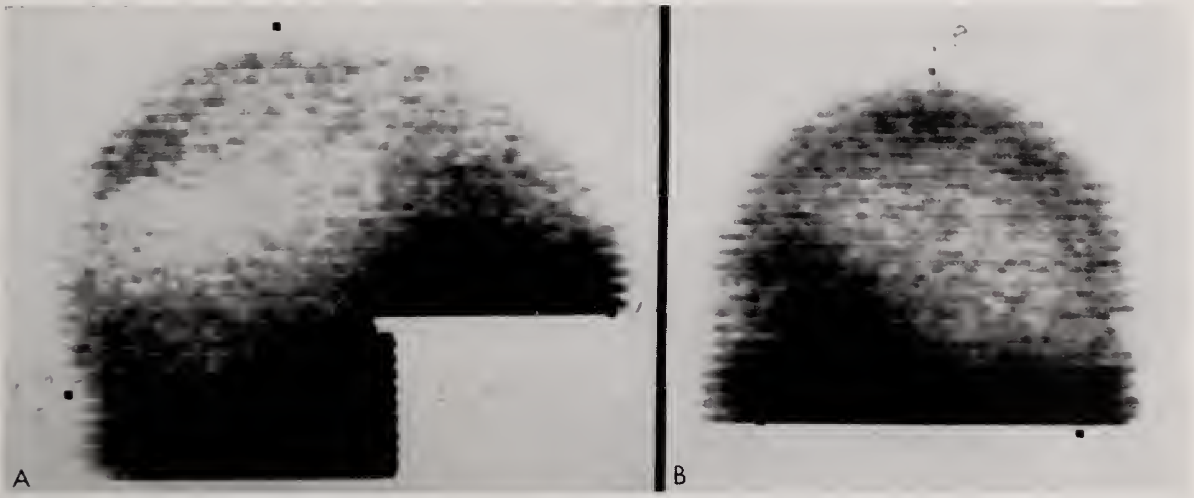

FIG. 2. A and B. Brain scan showing increased uptake in frontotemporal region in both anterior and lateral views.

Discussion

In his monograph Cushing[4] described a series of patients who presented the clinical picture of exophthalmos and obvious temporal protrusion. He published photographs of a number of these individuals who bore pterional meningiomas which had caused hyperostosis of the overlying temporal bone accompanied by visible enlargement. Although the thickening of the sphenoid wing which Cushing described was not seen in our case, the appearence of the angiogram and of the radioisotopic brain scan was clearly compatible with meningioma.

A review of the literature indicates the rarity with which Hodgkin's disease manifests itself as a discrete intracranial mass. Burstein et al[5] found 6 such cases among a total of 242 examples of primary sarcoma of the brain gleaned from the records of the Mayo Clinic. Williams et al[2] noted that, although cerebral symptoms are not uncommon in cases of systemic Hodgkin's disease, less than 0.3 per cent of the cases reviewed showed evidence of a cerebral tumor mass. Only 1 of the 4 cases which they described had been operated upon. Similarly John and Nabarro[6] found only 1 proven example of cerebral tumor among 347 cases of Hodgkin's disease.

Several isolated cases have been reported in which Hodgkin's disease involved the brain in an unusual fashion.[1, 7-13] In one instance a subdural effusion associated with this tumor was thought preoperatively to be a subdural hematoma.[12] According to Litvac et al[10] Hodgkin's disease involving the optic nerves and chiasm had never been reported. Little could be accomplished at craniotomy and their patient died. Hodgkin's disease may affect the brain diffusely,[1] destroy multiple cranial nerves,[9] give rise to a syndrome of cerebellar degeneration in the absence of direct invasion by tumor[8, 13] or even involve the pituitary gland, with diabetes insipidus being the main manifestation.[2] Progressive multifocal leukodystrophy also has been reported to be a frequent cerebral manifestation in cases of systemic Hodgkin's disease.[3] The diagnosis is not ordinarily suspected prior to surgery unless the patient is known to suffer from systemic Hodgkin's disease. Destruction of the second cervical vertebra in our case forewarned us of the possibility of metastatic cancer.

The combination of angiography and brain scan, not employed in many previously reported cases, gave accurate localization in our case. Postoperatively the patient obtained dramatic relief of his headache and return of the right eye to its normal position. After several days of radiation therapy the mass in the neck disappeared.

The average survival time for patients with reticulo-endothelial tumors of the brain who have been treated by craniotomy in combination with

(Continued on page 97)

Postextrasystolic U-wave Changes in a Patient with Subarachnoid Hemorrhage

MICHAEL SHEFFERMAN, M.D.,* AND IRENE HSU, M.D.†

ELECTROCARDIOGRAPHIC abnormalities are known to occur in patients with cerebrovascular accidents,[1] particularly in those with subarachnoid hemorrhage[2]; these changes may simulate acute myocardial infarction but are usually confined to the ST-T-U segment.

We recently observed a patient with subarachnoid hemorrhage whose electrocardiogram showed striking postextrasystolic U-wave changes. As far as we know, this finding has not been previously described in patients with central nervous system disorders.

Report of Case

A 50-year-old Negro woman was admitted to the George Washington University Hospital complaining of headache and stiff neck of 1 day's duration. Her past history was negative except for mild hypertension. She was not taking antihypertensives or any other drugs. Examination revealed a lethargic woman with moderate nuchal rigidity, bradycardia with premature contractions, and lowered body temperature of 35.7°C rectally; otherwise the neurologic and general physical examinations were negative. The blood pressure was 150/80 mm.Hg. Spinal tap showed elevated pressure of 240 mm. saline and grossly bloody fluid in all 3 tubes with xanthochromic supernatant. Blood count, urinalysis and blood urea nitrogen were normal, as were serum Na, Cl and CO_2. Serum K was low, 3.3 mEq./L (normal values for our laboratory are 3.6 to 5.4 mEq./L). There was mild hyperglycemia of 124 mg. per cent; serum Ca, P and Mg. were normal. An electrocardiogram (figure 1) revealed nodal rhythm at 63 per minute with premature contractions, ventricular and supraventricular, with

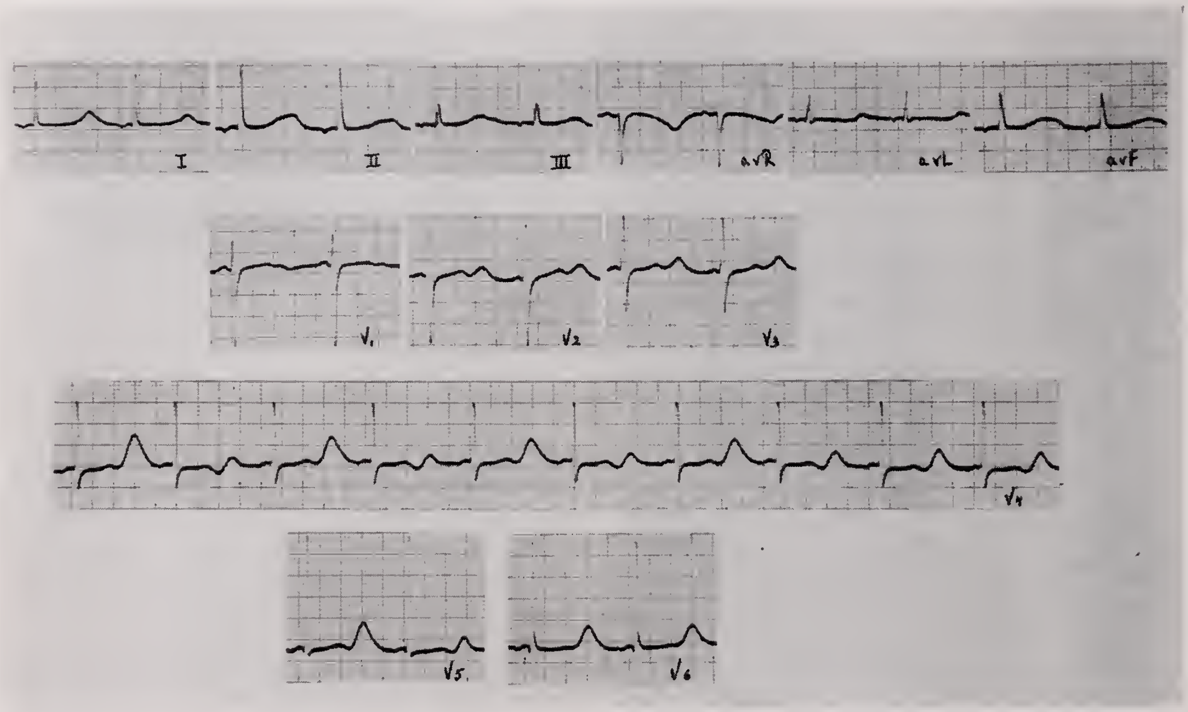

FIG. 1. Twelve lead admission ECG.

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* Fellow in Cardiology, Division of Cardiology, Department of Medicine, George Washington University Medical Center.

† Associate Professor of Medicine, Division of Cardiology, Department of Medicine, George Washington University Medical Center, 901 23rd Street, N.W., Washington, D. C. 20037.

aberrant conduction; low T waves with marked prolongation of the QT interval to 0.44–0.48 second and large U waves which showed spontaneous fluctuation in configuration and amplitude with marked increase in amplitude in the postextrasystolic beats (figure 2). The QRS complexes were normal.

The striking U-wave changes were of particular interest to us, and both hypokalemia and subarachnoid hemorrhage were considered in the differential diagnosis. The patient was monitored with frequent electrocardiogram strips, and several hours following admission it was noted that the premature contractions were increasing in frequency, possibly due to the increased intracranial pressure. For this reason 50 c.c. of 50 Gm. glucose was given intravenously under continuous ECG monitoring. This was promptly followed by further increase in the number of premature contractions (interpreted to be of ventricular as well as of supraventricular origin with aberrant conduction) and a short run of probable ventricular tachycardia. There was no change in the U waves, except for the fact that with the increasing number of the premature contractions there was a corresponding increase in the frequency of the postextrasystolic U-wave changes (figure 3). Aggravation of the arrhythmia was attributed to lowering of serum K by the hypertonic glucose, and an intravenous drip of KCl was promptly begun. Serum K obtained immediately before the glucose administration was 3.6 mEq./L and 3.2 mEq./L after the injection (the degree of change is greater than the 0.3 mEq./L usually seen in our laboratory in a duplicate sample). Administration of KCl was followed by gradual disappearance of the premature contractions over a 30-minute period. The U waves remained unchanged except for the disappearance of the postextrasystolic change. Twenty-four hours later serum K was completely normal (4.2 mEq./L). The cause of the initial hypokalemia could not be established. Briefly during the second hospital day the premature contractions reappeared, and again there was marked increase in the amplitude of the postextrasystolic U waves.

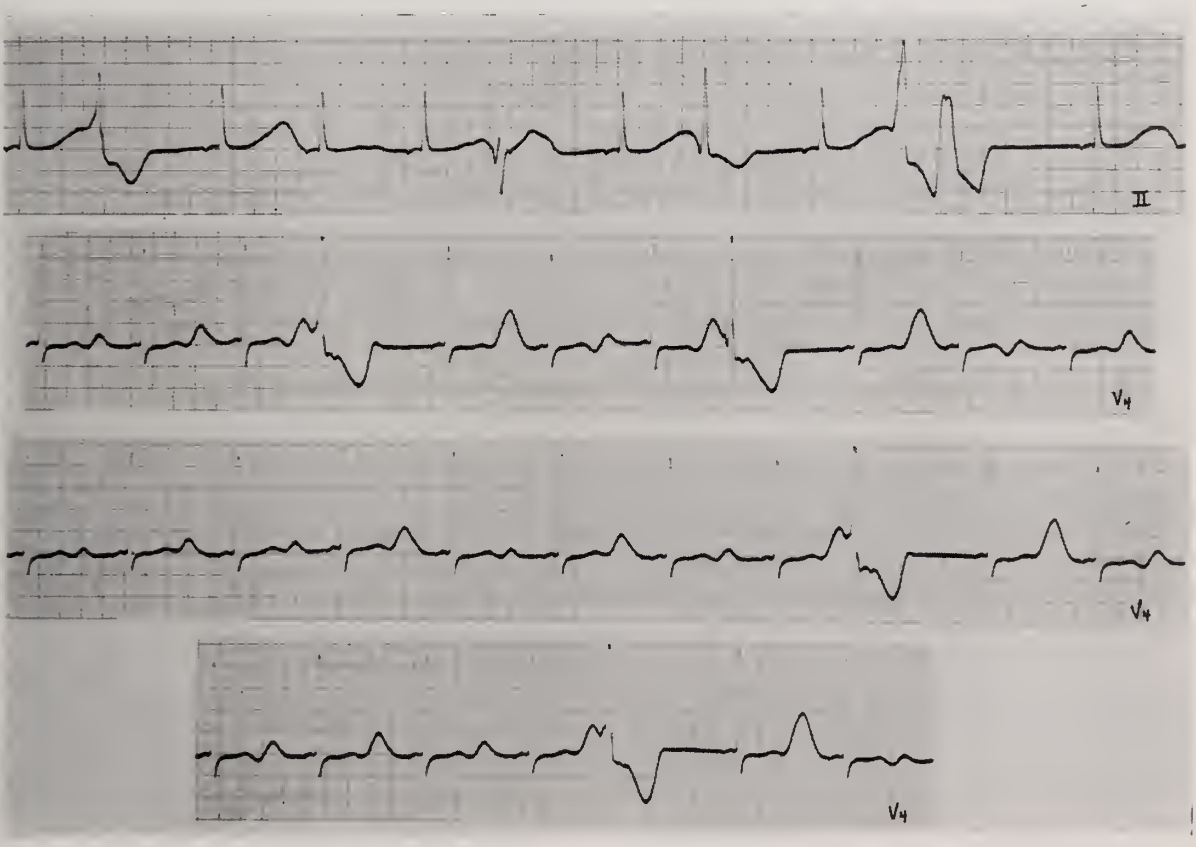

FIG. 2. Selected strips of the admission ECG illustrating postextrasystolic U-wave changes.

During the next 2 days several additional doses of KCl, 20 to 60 mEq. each, were given by a slow intravenous drip under continuous ECG monitoring. This was done for further evaluation of the effect of potassium on the U waves. There was no change in the postinfusion tracings, and the ECG (figure 4) did not approach normal until the fifteenth hospital day, long after the normalization of the serum K. Oral potassium supplement was given throughout the hospitalization. The subsequent course was uneventful. Bilateral carotid arteriography revealed no cerebrovascular abnormality. Blood pressure and serum K remained normal. The patient was discharged asymptomatic on the twenty-seventh hospital day.

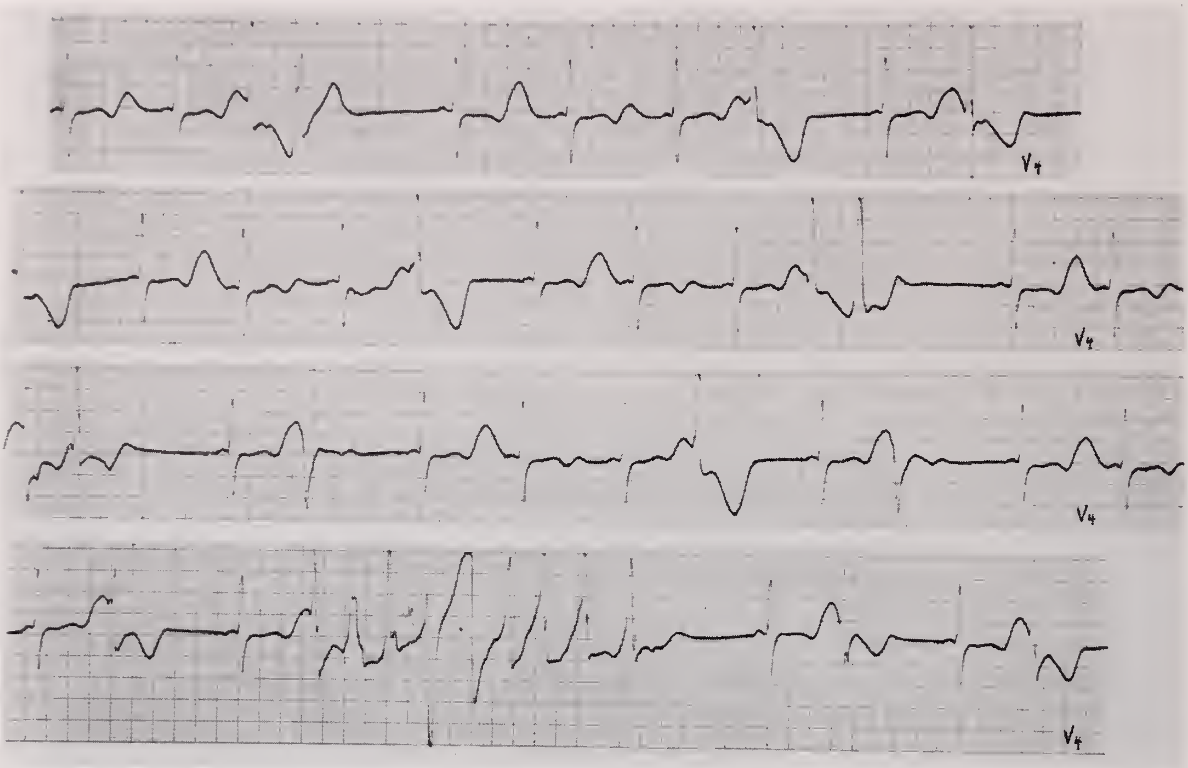

FIG. 3. Leads 2 and V4 following administration of hypertonic glucose.

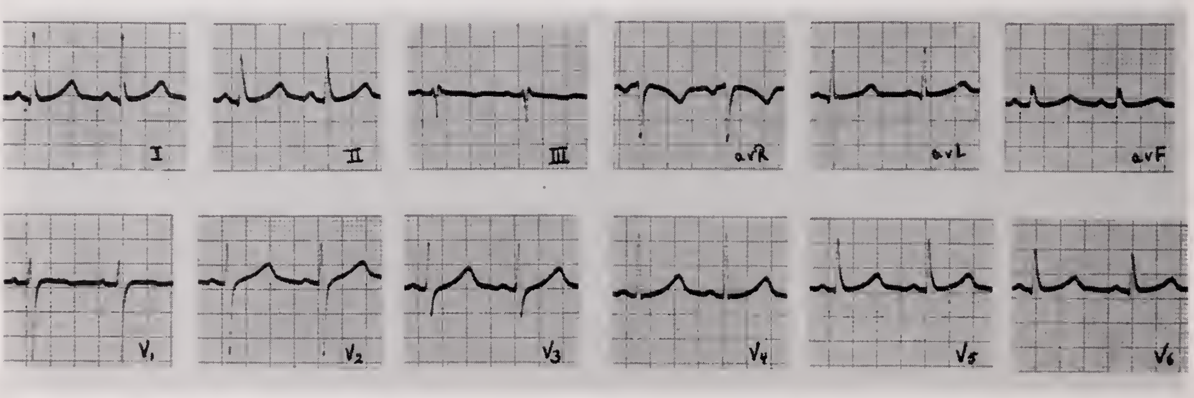

FIG. 4. Twelve-lead ECG on fifteenth hospital day.

Discussion

It is well known that experimentally produced lesions in the brain can cause ECG abnormalities.[3-6] However, the mechanism involved is poorly understood, and it was recently emphasized by Burch[7] that, in spite of a seemingly acceptable neural pathway from the brain to the heart through the sympathetic nerves, the process at the myocardial cell level is obscure.

Present-day knowledge of the genesis of the U waves is incomplete. A variety of theories have been advanced to account for the normal U wave[8] which is frequently referred to as an after-potential.[9] According to Hoffman[8] the most likely explanation is that the U wave is merely a surface record of the repolarization of the ventricular Purkinje system, i.e., the Purkinje-fiber T wave. Abnormal U waves have been observed in a host of different situations. These include hypokalemia, CNS disorders, myocardial ischemia, and administration of quinidine and of phenothiazines, especially Mellaril®.[10-13]

One case has been reported[14] of giant U waves with postextrasystolic U-wave alteration in a 39-year-old female alcoholic who had seizures which were thought to be due to ventricular arrhythmia rather than an intracranial lesion. Serum potassium determinations were slightly below normal in that patient, but the ECG abnormalities disappeared following potassium administration, and hypokalemia was felt to be the cause of the U-wave changes.

The electrocardiographic changes secondary to CNS disease are of considerable practical importance since they may mimic those due to intrinsic heart disease.

Since the first definitive study of a rather characteristic ECG pattern observed in cerebrovascular accidents[1] a number of confirming reports have been published.[2, 15-24] Most authors have emphasized the ST-T-U changes associated with prolongation of the QT interval, T-wave inversion, and prominent U waves. Less frequently electrocardiographic changes have simulated an acute myocardial infarction.[2]

Recently 2 additional T-wave changes have been observed. Unusually prominent T waves were described by Burch and Phillips[7] in 38 of 55 patients with ECG alterations secondary to CNS disease. Notched T waves occurred in 21 of the 89 CNS patients reported by Millar and Abildskov.[25]

In our patient with subarachnoid hemorrhage, in addition to the frequently described prolongation of the QT-U interval and prominent U waves there was a striking postextrasystolic increase in the amplitude of the U waves. This would appear to be still another ECG manifestation due to CNS disease.

Summary

Electrocardiographic abnormality consisting of marked postextrasystolic U-wave changes was observed in a patient with subarachnoid hemorrhage. This finding has not been previously reported in patients with CNS disease.

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Xanthofibrosarcoma

Report of a Case

LT. COMMANDER DONALD K. ROEDER, MC, USN,* COMMANDER N. A. JANOVSKI, MC, USNR,†
AND LIEUTENANT (J.G.) R. EARL SMITH, MC, USN‡

XANTHOFIBROSARCOMA is very rare, and as of today there have been only 16 cases reported. We are reporting an additional case of malignant tumor of histiocytic origin which conforms to the criteria for malignant fibrous xanthomas or xanthofibrosarcoma, as described by Kobak and Perlow[1] and O'Brien and Stout.[2]

Report of Case

M. L., a 21-year-old Caucasian man, was seen at his local medical facility in early June 1968 because of vague right anterior chest discomfort over the area of the fourth costal cartilage. Because of an abnormal chest X-ray film he was air-evacuated to the Naval Hospital, Bethesda, Maryland on June 20, 1968. Physical examination at the time of admission demonstrated a slight interscapular fullness to the right of the midline but was otherwise within normal limits.

Initial laboratory studies, including complete blood count, urinalysis, bleeding time, Lee-White coagulation time, partial thromboplastin time, prothrombin time, serum sodium, potassium, chloride, CO^2-combining power, total protein, albumin, calcium, alkaline phosphatase, total bilirubin, blood urea nitrogen, glucose, SGOT, and VDRL, were negative or normal. Initial chest X-ray examination demonstrated a bilobed soft tissue tumor arising posteriorly in the superior mediastinum and involving and destroying the fourth rib posteriorly (figure 1). The radiologist's impression was ganglioneuroma or neuroblastoma. A verbal report of X-ray films taken in January 1968 at the time of entry into the service was "normal chest film."

On June 27, 1968 under general endotracheal anesthesia a right posterolateral thoracotomy was performed. The pleural cavity was entered through the fifth intercostal space. An 8 by 5 cm. bilobed, encapsulated tumor involving and destroying the posterior aspect of the right fourth rib was found. There was no apparent involvement of either the fourth thoracic vertebral body or the third and fifth ribs. The capsule of the tumor was densely adherent to the posterolateral portion of the body of the fourth thoracic vertebra. The tumor was excised en bloc, including the posterior portions of the third and fifth ribs and the transverse processes of the fourth and fifth thoracic vertebrae except for that portion of the capsule of the tumor overlying the fourth vertebral body. This area was curetted and cauterized. It appeared that the tumor extended into the fourth thoracic neural canal, and this area was also cauterized.

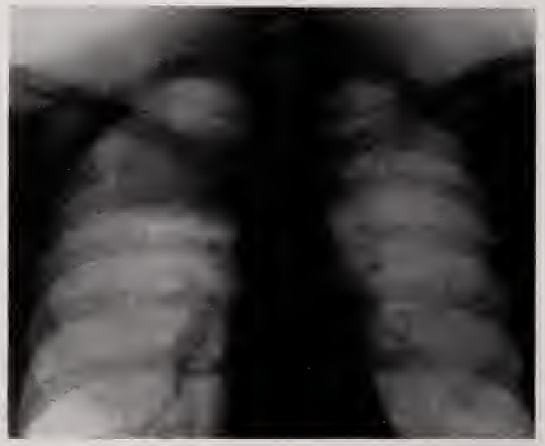

FIG. 1. Soft tissue tumor involving and destroying the fourth rib posteriorly.

The postoperative course has been uncomplicated. A thoracic myelogram demonstrated no defects. A course of radiotherapy to total approximately 5,000 rads over a 5-week period has been started.

Gross pathologic examination revealed a neoplasm measuring 8 by 6 by 5 cm., weighing 110 Gm. The tumor was attached to 3 resected ribs. It was partly encapsulated and appeared bilobed. The surgical incision transected the tumor on the medial aspect. It was semifirm (figure 2). The parietal pleura covering the tumor was partly hemorrhagic and partly glistening. After bisecting the tumor, one was struck by its intensive yellow appearance. Intermingled were areas of necrosis and cystic degeneration (figures 3 and 4). The tumor showed an infiltrative type of growth and invaded the intercostal muscles between the third, fourth, and fifth ribs. The fourth rib showed a pathologic fracture and severe destruction of its anterior medial aspect. Histopathologic examination showed the tumor to be formed by proliferating, elongated and spindle-shaped fibroblasts and histiocytes. Considerable numbers of these latter cells contained, within their cytoplasm, lipids which were demonstrated with oil red "O" preparations. Scattered in between the fibroblasts and histiocytes were giant cells of Touton type. There was considerable nuclear pleomorphism and nuclear hyperchromatism. Large cystic areas within the tumor were filled with what appeared to be cholesterol slits. The inflammatory reaction was sparse. The morphologic appearance of the tumor was variable. In some areas the tumor was dense and more fibroblastic in character; in other areas lipid-laden histiocytes dominated the picture. In still other areas there were massive aggregations of giant cells. Mitotic figures were counted, 1 per hpf. Reticulum stain showed deposition of fine reticulum fibers in some areas. Masson's trichrome stain showed discrete deposition of collagen in the cellular areas occupied by fibroblasts. Iron-positive material was detected, predominantly in histiocytes. The neoplastic cells disrupted the cortical portion of the rib and invaded the medullary portion. In addition, there was through-and-through invasion of the cortical portions of the rib, with a pathologic fracture (figures 5-8).

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* Resident in Surgery, Department of Thoracic and Cardiovascular Surgery, United States Naval Medical School, National Naval Medical Center, Bethesda, Md. 20014.

† Professor of Pathology, Creighton University School of Medicine, Omaha, Nebr. 68108; recently Chief of Anatomic Pathology, United States Naval Medical School. (Reprint requests to Dr. Janovski.)

‡ Department of Anatomic Pathology, United States Naval Medical School.

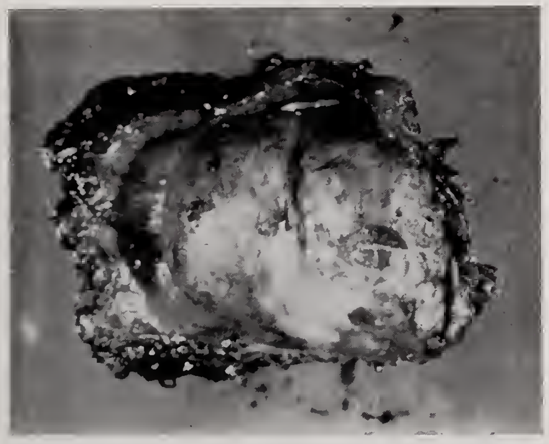

FIG. 2. Anterior view of the tumor protruding into pleural cavity and occupying the space between third and fifth ribs.

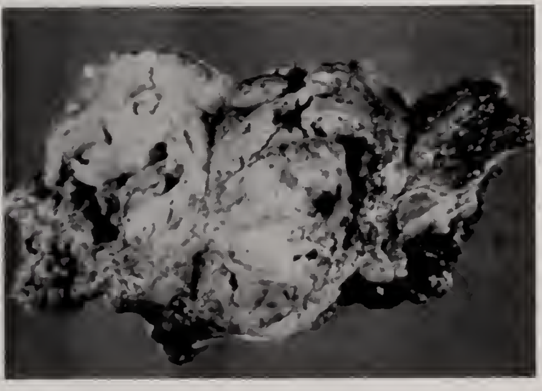

FIG. 3. Bisected tumor demonstrating pathologic fracture of fourth rib.

Review of the Literature

Kobak and Perlow[1] first reported a "xanthomatous giant-cell tumor" of definite malignant behavior. Until that time there was controversy about the malignant potential of xanthomatous giant-cell tumors arising in soft tissue. They were always considered to be benign. This first case report described excision of a tumor arising on the lateral surface of the arm. Microscopic examination revealed 4 elements consistent with the term "xanthofibrosarcoma": polyhedral and spindle-shaped cells with foamy cytoplasm, giant cells, interstitial connective tissue, and patches of fibrous tissue with scattered accumulations of hemosiderin. Moderate cellular pleomorphism and atypical mitotic figures were also present. Metastases ultimately occurred to the lungs, jejunum, and skin, and the patient died 18 months after the lesion was noted.

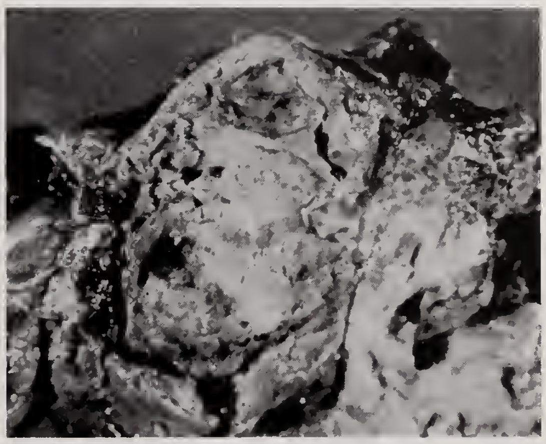

FIG. 4. Tumor characterized by intense yellow-brownish color and intermingling areas of necrosis and cystic degeneration.

Kauffman and Stout[3] reviewed tumors of mesenchymal origin in 39 children. These tumors were classified as fibrous xanthomas and histiocytomas depending upon the amount of fibrous tissue demonstrated on histologic section. Of these cases there were 5 malignant or questionably malignant fibrous xanthomas and 3 malignant histiocytomas. These determinations were made on the basis of the number of mitoses in 50 high-power fields. This method of determining malignancy was believed to be inadequate from a clinical standpoint.

The separation of such mesenchymal tumors of the soft tissue into "histiocytomas" and "fibrous xanthomas" was arbitrary. Ozzello, Stout and Murray[4] were able to demonstrate histiocytic outgrowth in tissue cultures from both types. This confirmed Stout's impression[3] that neoplastic histiocytes could behave as facultative fibroblasts and were, in fact, the parent cell for both tumors.

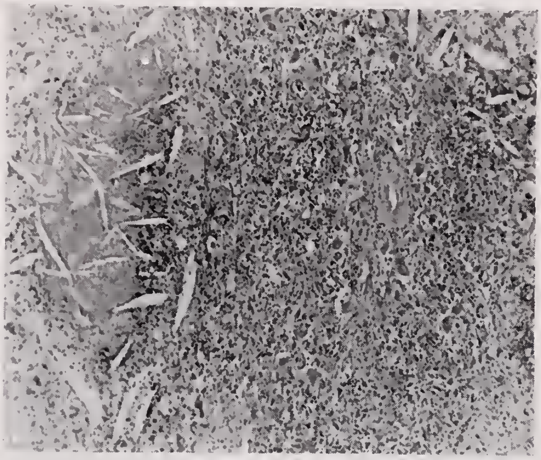

FIG. 5. Tumor formed by histiocytes, fibroblasts, and giant cells. There are areas of necrosis and accumulations of cholesterol.

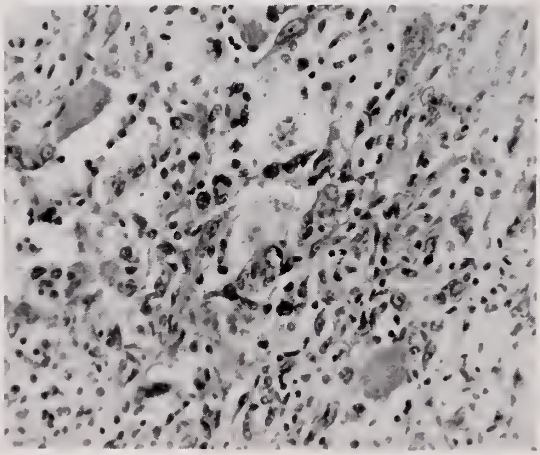

FIG. 7. Highly atypical giant tumor cells associated with atypical histiocytes.

O'Brien and Stout[2] reviewed 979 cases of fibrous xanthomas and dermatofibrosarcoma protuberans and 537 cases of giant-cell tumors and villonodular synovitis of the soft tissues. They selected 53 cases of possible or potential malignant tumors either because of high mitotic rate, active infiltrative growth, or metastases. The fibrous xanthoma was defined as a tumor of fibrous elements (with or without reticulum fibers) and/or of "storiform" or matted formation (with or without lipid-laden histiocytes). This study demonstrated that malignancy could not be predicted on the basis of sex, location, mitotic rate, cellular pheomorphism, or even cell type. Of these 53 cases 15 were unquestionably malignant, and 13 of these patients died. Of the 3 histologic tumor types—giant cell, "storiform," and mixed—only giant-cell tumors did not occur in the malignant group. The difficulty in establishing the potential malignancy of these tumors is still unsettled. Stout and O'Brien[2] concluded that size, i.e., tumors of greater than 6 cm. by 2 cm., were most likely malignant.

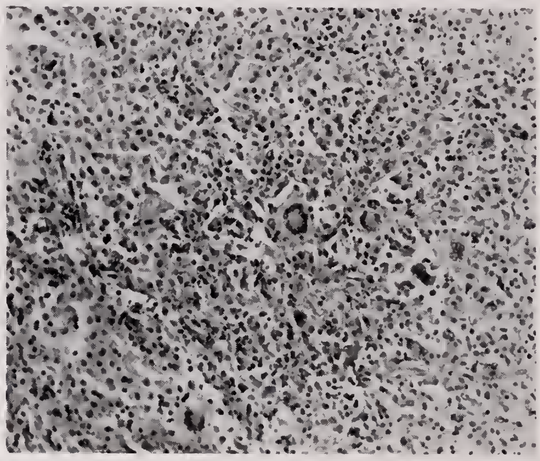

FIG. 6. Touton type of giant cells scattered among plump histiocytes and slender fibroblasts. Inflammatory cells are sprinkled.

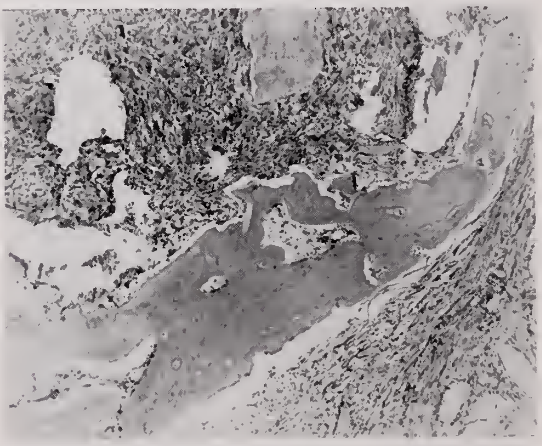

FIG. 8. Invasion and destructive fragmentation of cortical bone of fourth rib.

It is of interest that fibrous xanthoma of the skin is a biologically benign tumor despite its frequently bizarre or "malignant" histologic appearance. Helwig, quoted by Kempson,[5] suggested that such bizarre appearing lesions be termed "atypical fibroxanthomas."

Stout and Lattes[6] consider malignant xanthofibroma to be identical to, or synonymous with malignant fibrous histiocytoma. Metastases in such cases usually occur via the blood stream, but in 6 cases quoted by Stout and Lattes[6] there was metastatic involvement of lymph nodes.

Discussion

In considering the histogenesis of xanthofibrosarcoma a statement of the difference between the main cellular components of this tumor, namely, the histiocytes and the fibroblasts, should be made. There is no sharp borderline between the histiocytes and the fibroblasts. The histiocytes represent the parent cell of the fibroblasts and may develop into fibroblasts. The histiocytes possess the ability to form reticulum, to phagocytize bacteria and particulate matter, and to store within their cytoplasm lipid material. The fibroblasts are capable only of forming collagen. The giant cells of Touton type result from fusion of several histiocytes and thus may retain some of the functional characteristics of the mother cells, the histiocytes.

Xanthofibromas of the skin or of the soft tissue are well circumscribed nodular tumors with blunt borders. Microscopically they are characterized by "pushing" rather than invading. As stated before, the xanthofibromas occurring in the dermis may present themselves histologically as atypical, bizarre, and alarming tumor growths fulfilling morphologic patterns of "malignant" tumors. However, the biologic behavior of this tumor is entirely benign.

The behavior of xanthofibroma occurring in soft tissue is almost reversed. That is to say, the histologic appearance of the tumor may be extremely misleading by virtue of bland-appearing cells with relatively inconspicuous cell atypism and relatively low mitotic index. Yet, such tumors may be highly aggressive and biologically malignant. This is best demonstrated in the case presented here, in which a tumor developed in a period of 5 months, reaching proportions of 8 cm. in diameter and producing pathologic fracture of a rib. It is fortunate that the tumor had not penetrated into the vertebral canal. Certainly it does show biologically malignant behavior.

From the standpoint of treatment of such rare and poorly understood tumors of the soft tissue, it is recommended that the tumor be excised, preferably in healthy tissue. If this is impossible the tumor should be destroyed by curettage or electrocautery. Subsequently the patient should undergo radiotherapy to the level of 5,000 rads. This therapy is recommended in order to destroy any remaining neoplastic cells or to transform potential tumor into a more fibrotic, sclerotic entity.

The prognosis in such a case as presented here is guarded. If metastasis occurs, it will be most likely hematogenous. Careful follow-up of such patients with liver scan and periodic X-ray films of the lungs is recommended for a period of at least 5 years.

Summary

A case of xanthofibrosarcoma rapidly developing in a 21-year-old Caucasian man and producing a pathologic fracture of a rib has been presented. The malignant potentiality of the tumor is based primarily on roentgenographic findings and clinical behavior. Histopathologically this tumor demonstrated an aggressive, invading pattern of growth in spite of a relatively benign cellular appearance.

The type of treatment is based on case-to-case situation because the rarity of this tumor precludes sound statistical data as to survival and/or management.

Particular emphasis has been directed to the discrepancy between the benign histologic appearance of the tumor and its malignant biologic behavior.

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The Late Apical Systolic Murmur*†

JOSEPH W. LINHART, M.D.‡

During the last 5 years evidence has accumulated that an apical systolic murmur confined to the latter part of systole, unrelated to coronary artery disease, is not necessarily benign or functional in nature. The late systolic murmur was initially thought to be related to extracardiac structures, such as the pericardium. Since these late systolic murmurs were frequently associated with mid-systolic clicks and since pericardial adhesions were seen at autopsy in some patients, the belief in a benign extracardiac origin was a natural assumption. However, a number of observers have recently presented evidence that the late systolic apical murmur and even the mid-systolic clicks may arise from the mitral valve and its supporting structures, be associated with a characteristic deformity of the mitral valve, be associated with mild to moderate late mitral regurgitation, and not necessarily be benign in clinical course.

Clinical characteristics. Patients with late apical systolic murmurs and late mitral regurgitation have generally been young or middle-aged adults with a predominance, in our experience, of females between 20 and 40 years of age. Occasionally a history of rheumatic fever is elicited, but generally no definite etiologic factor can be ascertained for the murmur. Often, the murmur was first noted in childhood and this, plus the occurrence in more than 1 family member, suggests a congenital and familial incidence in some patients. Most patients are asymptomatic and are referred for study only because a murmur is present on routine examination. Some may have palpitations, easy fatigability, and breathlessness on heavy exertion. Most are functionally class I or II (New York Heart Association Classification).

Apex phonocardiography. No significant vibrations are present in early systole. The murmurs occupy the last one-half or two-thirds of systole and tend to be crescendo in character, ending with the aortic closure sound. The murmur may be initiated by 1 or more systolic clicking sounds. Mostly the murmurs would be graded 2–3/6, and there is little radiation of the sound from the apex. The late systolic murmur responds to drugs in a fashion similar to the typical holosystolic murmur of mitral regurgitation. With phenylephrine, which raises blood pressure and left ventricular pressure, there is an intensification of the holo- and late systolic murmurs of mitral insufficiency. When amyl nitrite is inhaled and the systemic arterial pressure decreases these murmurs decrease in intensity.

Electrocardiograms. In general, the electrocardiogram is normal, although occasionally the criteria for left ventricular hypertrophy may be present. Some cardiologists have described significant electrocardiographic changes in association with late systolic clicks and murmurs. These generally consisted of abnormal T waves and S-T segments in leads 2, 3, and AVF. In addition, ventricular extrasystoles and paroxysmal tachycardia may occur.

Chest roentgenography. Generally no significant abnormalities are detected by roentgenography. In a few patients, however, definite but mild left ventricular and left atrial enlargement are apparent.

Cardiovascular hemodynamics. In most instances intracardiac pressures and the cardiac index are normal. Rarely, mild elevation of left ventricular end-diastolic pressure and left-atrial A wave are found.

Angiography. Cineangiography in the right or left anterior oblique projections demonstrates the characteristic mitral valve deformity. During early systole the leaflets of the mitral valve balloon or prolapse backward into the left atrium as contrast material passes from the left ventricle into the aorta. Then, only during the latter part of the systole does the contrast material regurgitate from the left ventricle to the left atrium. The degree of mitral regurgitation is usually only mild to moderate, and the left heart chambers are normal in size. A few patients have been seen, however, with more severe "late" mitral regurgitation with definite left atrial and left ventricular enlargement.

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* From the Section of Cardiology, Department of Internal Medicine, Mount Sinai Hospital of Greater Miami, Miami Beach, and the University of Miami School of Medicine, Coral Gables, Fla.

† Submitted to the Medical Annals by the Washington Heart Association.

‡ Associate Professor of Physiology and Internal Medicine and Director, Cardiac Catheterization Laboratory, University of Texas Medical School at San Antonio, Texas 78229.

Simultaneous electrocardiograms, external and internal phonocardiograms, and pressure tracings have been compared with the cineangiographic data. There has been a fair correlation between the beginning of the late systolic murmur and the first appearance of the contrast material in the left atrium. The systolic click coincided with the timing of the maximum prolapsing of the mitral valve leaflets into the left atrium.

Clinical course. In those patients with a late systolic murmur, mild mitral regurgitation, normal electrocardiogram, and normal chest X-ray films, initial studies have shown a relatively uncomplicated clinical course.

Since this type of murmur is heard so frequently in any diagnostic cardiac clinic it is thought that the lesion is generally benign. It is certainly possible that some of these patients may progress to the development of a holosystolic murmur and acquire the hemodynamic as well as clinical characteristics of the more common forms of mitral valve insufficiency. Some of the patients with holosystolic murmurs may have begun their clinical course in this way and were not followed up closely because of the initially benign course, and hence the transition may have been missed. Only by recognizing and following closely the patient with the late systolic murmur will the ultimate prognosis be known.

It must be appreciated, however, that some of these patients may develop bacterial endocarditis following dental procedures. Therefore, the usual precautions against bacterial endocarditis should be instituted whenever a patient with this type of murmur is seen. We have, in addition, seen 2 patients with late systolic murmurs who had 3+/4 mitral regurgitation cineangiographically and definite mild left ventricular and left atrial enlargement. If their clinical course follows that of other forms of mitral valve disease, surgery may be necessary at some future time.

A group of patients has been described with late systolic murmurs and midsystolic clicks, abnormal T waves, prolonged Q-T intervals, prominent U waves, and a high incidence of extrasystoles and paroxysmal tachycardia. A familial incidence was noted and also the occurrence of psychiatric disorders. One patient had seizures related to atrial flutter with 1:1 conduction, and sudden death occurred in 1 patient.

Therefore, although the course in these patients is usually benign, the physician must guard against the development of bacterial endocarditis and be prepared to control the arrhythmia that may appear in those with abnormal resting electrocardiograms.

Intracranial Hodgkin's Disease—
Koulouris, Lang and Fox

(*Continued from page 87*)

radiation therapy is 3¾ years.[5] This figure is in striking contrast to the average survival time of 5 months in patients treated by craniotomy alone.

Summary

This report records an example of intracranial Hodgkin's disease which simulated the cases of pterional meningiomas described by Cushing. Our case was localized by brain scan and angiography and then treated successfully by craniotomy with follow-up radiation therapy.

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President's Page

LET'S GIVE MEDICAID A TRY!

A BELIEF has developed in our country that high quality medical care is the right of every person. American medicine has always held that anyone who desires medical care has a right to free choice of physician. Until recent years physicians were able to supply full services to patients regardless of their ability to pay. Due to the increase in population and its concentration in cities, a shortage of practicing physicians has resulted. More and more services are necessarily supplied by public-supported clinics. The conditions in these clinics, which are usually overcrowded and often inaccessible to the medically indigent, have led to a great loss of time and intolerable delays.

Title XIX of the Social Security Amendments of 1965 inaugurated grants to states for medical assistance programs. It was intended through Medicaid to make it possible for the medically indigent to receive medical care at the place of his choice, with the vendors to be paid adequately by the states, supported with Federal funds.

On December 27, 1967, Public Law 90-227 enabled the Commissioner of the District of Columbia to certify the Department of Public Health as a single state agency to administer the medical assistance program under Title XIX of the Social Security Act (D. C. Medicaid). Some months later Federal funds were made available to the Health Department for starting the D. C. Medicaid program. By mid-December some 70,000 of the nearly 129,000 eligibles received their identification cards, and a few physicians and pharmacists received payments for services rendered to medically indigent patients.

Full operation of the D. C. Medicaid plan has been delayed by the failure of most of the hospitals to agree to contracts requiring them to operate at a loss and by a failure of the majority of physicians to agree to exceedingly complex conditions for their participation. Hospitals should not be required to support the program financially. Physicians' payments should be handled through Medical Service of D. C. or another experienced health insurance organization and without the requirement of a prior agreement with the physician to participate. Let the patient and his doctor agree as to who will pay for the services.

Colleagues, this program is our opportunity to get the poor back into the mainstream of private medical care, maintain the patient's right of free choice of his physician, and establish the right of the physician to adequate remuneration for his services to the medically indigent. There may be too many patients, but we should give it a try.

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Warnings: Lomotil should be used with caution in patients taking barbiturates and with caution, if not contraindicated, in patients with cirrhosis, advanced liver disease or impaired liver function.

Precautions: Lomotil is a Federally exempt narcotic with theoretically possible addictive potential at high dosage; this is not ordinarily a clinical problem. Use Lomotil with considerable caution in patients receiving addicting drugs. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur, signs may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils, tachycardia; continuous observation is necessary.

Adverse Reactions: Side effects reported with Lomotil therapy include nausea, sedation, dizziness, vomiting, pruritus, restlessness, abdominal discomfort, headache, angioneurotic edema, giant urticaria, lethargy, anorexia, numbness of the extremities, atropine effects, swelling of the gums, euphoria, depression and malaise. Respiratory depression and coma may occur with overdosage.

Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are as follows:

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- electrolyte replacement
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Lomotil lowers the excessive intestinal propulsion characteristic of diarrhea. This reduction of precipitate intestinal flow allows a normal or more nearly normal reabsorption of fluid and electrolytes and counteracts the dehydration so hazardous to children.

Moreover, eight years' experience has demonstrated that Lomotil controls diarrhea with a minimum of unwanted secondary actions.

Senra del Valle and his associates[1] conducted a study of 477 children with diarrhea, most of whom were hospitalized with the disorder. Lomotil, used in 407 of the children, shortened the duration of the diarrhea.

Grinszpan, Goldstein and Divito[2] used Lomotil in 20 children with diarrhea and also reported a prompt disappearance of diarrhea. Harris and Beveridge[3] in a double-blind study of 50 children with diarrhea, however, found no clear pattern to suggest that Lomotil influenced the course of the condition.

Michener, Brown and Turnbull[4] added evidence supporting the beneficial effects of Lomotil in 80 children, concluding that Lomotil was highly useful in controlling abdominal cramping, diarrhea and hypermotility.

Children: Total Daily Dosage

3-6 mo.	½ tsp.* t.i.d. (3 mg.)
6-12 mo.	½ tsp. q.i.d. (4 mg.)
1-2 yr.	½ tsp. 5 times daily (5 mg.)
2-5 yr.	1 tsp. t.i.d. (6 mg.)
5-8 yr.	1 tsp. q.i.d. (8 mg.)
8-12 yr.	1 tsp. 5 times daily (10 mg.)
Adults:	2 tsp. 5 times daily (20 mg.) or 2 tablets q.i.d.

*Based on 4 cc. per teaspoonful

Maintenance dosage may be as low as one-fourth the initial daily dosage.

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Prescribing information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Side Effects/Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON-MERRELL INC.
PHILADELPHIA, PENNSYLVANIA 19144

Editorials

Let's Not Kill the Scientific Goose!

During the last 25 years there has been more progress in the treatment of cardiovascular diseases than had previously occurred in the total history of mankind. In these days when it is fashionable to vociferously call attention to the inequities and the imperfections in the accomplishments of groups, societies and governments, it seems only rational that we should also review what has and has not been accomplished and to appraise the circumstances which led us to success or failure, for only in this way can we find the real road to progress.

The advances in the treatment of cardiovascular disease have their origin in the concept that treatment must be definitive and that such definitive treatment necessarily involves the total correction of the underlying pathological and anatomical alterations which produce the abnormalities of physiologic function. Only the great faith of the pioneer surgeons in this concept made it possible for them to pursue this elusive goal and to develop the sophisticated surgical techniques which have produced the great progress which has been achieved.

This phenomenal growth of cardiovascular surgery has been almost completely an American development. It was conceived in an atmosphere of great intellectual freedom by general surgeons with broad clinical background which stimulated them to creative research to meet the problems which they recognized around them. They did not have, and would not have dreamed of asking for vast sums of money to begin these epoch-making forays into the future. There was little to encourage them. There was neither sustenance nor glamour in this radical research, but from these hard beginnings there emerged with much travail the solution to the problems of patent ductus arteriosus, coarctation, tetralogy of Fallot, vascular rings, mitral stenosis, the use of homografts and prostheses for the replacement of diseased arteries, and the revolutionary concept of valve replacement with synthetic materials.

These developments generated new and enthusiastic advocates of the mechanistic approach to cardiovascular problems and led to the development of cardiopulmonary bypass which made possible the correction of almost all intracardiac defects. Once these formidable initial barriers had been broken by creative and imaginative research it was followed by a massive period of development on many fronts which has led us to a period of increasing sophistication and refinement of these basic techniques which are applicable to all of the major aspects of organic heart disease. The successful application of these techniques has been associated with the acquisition of vast new knowledge of the dynamic pathology of cardiovascular disease and forced the development of entirely new diagnostic and therapeutic approaches based on this new information. As a result there has been a greater interdigitation of disciplines brought to focus on a common problem such as never occurred before.

As their incandescence has dwindled to a steady luminescence these great breakthroughs are viewed with the familiarity of the commonplace throughout our own country, and the methodology developed here has spread to the principal medical centers throughout the world. In a period of such rapid technologic advance concomitant changes in the social structure are inevitable. Changes in values and emphasis will strongly influence even a field which has been wholly dedicated to the advancement of the health of all people in what has been a maximal scientific effort.

Administrative attention is now being directed toward the improvement of the delivery of health services through the education of more doctors, community education, the increased use of paramedical personnel, and improvement of community health facilities, as well as the continuing

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

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education of physicians. All are necessary and commendable objectives to which the physicians of the United States have individually and collectively devoted more time and effort than any other comparable group in the world. To be sure many gains can and should be made by such endeavors to improve the scope of health services. A real danger, however, lies in the excessive diversion of resources and manpower into this effort to the serious detriment of the creative and developmental forces which have produced the very information and made possible the services which we are trying to disseminate, for these forces remain the foundation of our future medical progress. Never in the history of the world have so many had so much as in our Nation today, in spite of our lack of the instant perfection so eagerly sought. There are, however, limitations at any moment in time in the available resources. Unless these resources are wisely and efficiently used and constructively augmented to insure the preservation of a high standard of quality we can only lapse into a mass of mediocrity. Mature judgment must be used to preserve a balance of function.

Our progress in the past toward the conquest of cardiovascular disease is not insignificant. Let us not kill the scientific goose to get the political goose egg.

Charles A. Hufnagel, M.D.
President, Washington Heart Association

What Can Doctors Do to Reduce Washington Crime?

"I don't want to hurt you, Doc, just be quiet and do what I say!" With these words of reassurance, the first "patient" of the day shoved a pistol in the doctor's back and proceeded to rob him. He took the money from his wallet, took the wrist watch his wife had given him, but, amazingly, didn't seek any narcotics or drugs. Then the bandit asked the doctor if he had any rope. Upon being told "no" he quickly cut cord from the venetian blind, bound the doctor's hands behind him, and put adhesive tape over his mouth.

Just a few days later, in the same Capitol Hill area, another physician's office was robbed. The physician was operating on a patient when the door of his operating room was opened by a presumed overanxious patient. The doctor glanced up slightly and told the "patient" to wait in the reception room and he would take care of him in turn. But the nurse gasped, "Doctor, he won't wait; he has a gun." This bandit not only robbed the doctor but also all the patients. In this same area, during the same month, 3 other physicians and 1 dentist were similarly robbed during the daylight hours. If the robbers looked in all directions as they dashed out of these offices and onto the streets (like they do on TV crime shows), they must have seen that great symbol of a free people, our Capitol Building, for these crimes occurred within less than a mile of it.

One might expect the few blocks around the Capitol and White House to be comparatively safe and free of the danger of holdups. Yet those areas are not safe. A church only 3 blocks from the Capitol has had to close its doors, except during hours of worship, because of vandalism and because persons who stopped in to pray were robbed. Just a few days ago the Riggs National Bank was robbed, and that is only across the street from the U. S. Treasury and the White House! Police tell us that bank robberies in Washington were 400 per cent higher in 1968 than in 1967! And in 1969 we have already set new records—4 banking institutions robbed in each of 2 days, January 7 and 10.

Consider a recent letter to the Editor of the *Washington Star*: "One of our local chain stores was held up by armed robbers 63 times in 30 months. Only 16 arrests resulted. Only 3 of these were brought to trial. Only 1 was convicted and that because he jumped bail." On checking with the robbery squad I was informed that this story was essentially true. This means a robber in Washington might reasonably expect a 75 per cent chance of not being caught and an overall chance of 98.4 per cent of not being convicted and punished. Doesn't this suggest even to the most liberal thinker that crime has been allowed to pay? What creditor collects 98.4 per cent of his accounts? It appears in Washington crime does pay!

Recently a distinguished judge allegedly said that crime in Washington could be diminished if sufficient public sentiment were aroused against it. How can this be done? Why has the Executive Department of our Government appeared to be so relatively unconcerned and to have done so little about crime in Washington? The only step that is widely known is the Omnibus Crime Bill, and that had real difficulties not only in Congress but also at the White House.

Early in December, following the Capitol Hill area robberies, the Executive Director of the Medical Society directed a letter to the Washington Chief of Police. The letter and his reply are published in this issue of the ANNALS (see page 110). Support of Chief Layton's requests should be implemented by members of the Society in every way possible.

All of us realize that the man accused of crime has inalienable rights guaranteed to him by our Constitution, and we do not ask that these be abridged. But we do ask that some consideration be given to the law-abiding citizens and to the victims of crime. No matter what loophole is found in the law or what technicality serves to release from justice the criminal against whom there is convincing evidence, this does not negate the crime. The man was still robbed and beaten even though the Mallory Rule is applied and the criminal released.

We know there are many underlying causes for criminal behavior, and in many cases there may be mitigating circumstances. But the fact remains that crime will increase if only a very few criminals are caught and brought to justice.

I am much in favor of rehabilitation of the criminal, and for some persons rehabilitation is more important than punishment. Yet we can't forget that the animal in experimental psychology quickly learns to avoid the act which inflicts punishment upon him. Furthermore, on hearing a recent interview with an ex-criminal who had served a prison term, I well remember his words: "I have paid my debt to society." He believed that policemen should be armed and that the chance of being shot was one of the risks to be assumed when undertaking a life of crime.

The sentiment of the people must be aroused against crime. Somehow, in Washington, we must make our streets, our shops, our offices, and our churches safe from crime.

RAYMOND ALLEN OSBOURN, M.D.

Drug Dependence—Marijuana

MARIJUANA (cannabis—commonly known as joints, sticks, reefers, weed, grass, pot, muggles, mooters, Indian hay, locoweed, Mu, giggle-smoke, Griffo, Mohasky, Mary Jane). Marijuana is the dried flowering or fruiting top of the plant *Cannabis Sativa L.*, commonly called Indian hemp. Usually looks like fine, green tobacco and is smoked in pipes or cigarettes. Its possession is illegal.

Hashish is a preparation of cannabis, taken orally in many forms. It is infrequently made into candy, sniffed in powder form, mixed with honey for drinking or with butter to spread on bread.

A feeling of great perceptiveness and pleasure can accompany even small doses. Erratic behavior, loss of memory, distortion of time and spatial perceptions, and hilarity without apparent cause occur. Abusers may feel exhilarated or relaxed, stare off into space, have exaggerated sense of ability. The effects are markedly unpredictable.

Because of the vivid visions and exhilaration which result from use of marijuana, abusers may lose all restraint and act in a manner dangerous to themselves and/or others. They are accident-prone because of time and space sense of disturbance. Dependence (psychic but not physical) leads to antisocial behavior and could be forerunner of use of other drugs.

The Treatment of Heart Failure

When the old pump begins to fail,
Most often a little rest will do.

When excess fluid adds to our ails,
Try a little Withering brew.

Alas, we again get behind,
Then add chlorothiazide.

Come the day we fail the urinal,
You had better add mercurial.

Then when filtration fails again,
Try adding the old reliable aminophylline.

When you get into persistent edema,
Push the chlorides to hyperchloremia.

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Warning: Although generally safer than the amphetamines, use great caution when prescribing for patients with severe hypertension or severe cardiovascular disease. Should not be used during the first trimester of pregnancy unless potential benefits outweigh potential risks.

Side Effects: While rarely causing therapy to be withdrawn, side effects may occur occasionally; CNS effects (such as insomnia, nervousness, jitteriness), dryness of mouth, thirst, nausea, abdominal distress, constipation, headache, allergic response including urticaria or other dermatitis; rarely associated with tachycardia, cardiac arrhythmia or ECG changes.

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Use in children under 12 years of age is not recommended.

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Report of the Delegates on the AMA Clinical Session

Miami Beach, Florida, December 1–4, 1968

Discrimination in membership because of color, creed, race, or ethnic origin was clearly prohibited by a section added to the By-laws by the House of Delegates at the 22nd Annual Clinical Convention of the American Medical Association. The House action directed the Judicial Council to "admonish, censure or, in the event of repeated violations, recommend to the House of Delegates that the State Association involved be declared to be no longer a constituent member of the American Medical Association."

In another history-making action the House adopted a Board of Trustees' report providing a number of avenues whereby "qualified osteopaths may be assimilated into the mainstream of medicine." The Council on Constitution and By-laws was directed to prepare "appropriate by-law amendments so that qualified Doctors of Osteopathy may be admitted to full active membership in the American Medical Association."

The House of Delegates considered a total of 94 items of business, including 62 resolutions and 32 reports from Councils and Committees. These matters were considered in detail by 8 reference committees, in addition to almost 11 hours of deliberation by the House of Delegates. Your delegates were privileged to serve on 2 reference committees, Dr. Camalier as chairman of one and Dr. Hughes as a member of another.

Dr. Dwight L. Wilbur, President, addressed the House and pointed out that America has tried so hard and succeeded so well that our people become impatient with the realities of human limitation. This is apparent in increasing impatience with other than instant perfection in dealing with the stubborn social and medical problems of our time. He stressed that the medical profession must actively lead in areas of providing high quality health care for all our citizens, in controlling medical costs, in the development of more reasonable and realistic expectations by the public, and in unifying the profession and planning for an orderly future in medicine.

The House addressed itself to the problems of organ transplantation and after lengthy discussion and debate it adopted a statement on heart transplantation which covered 5 points:

1. The Orderly Evolution of Therapy. It outlined the criteria which a medical center should meet prior to initiating heart transplantation on humans.

2. Stressed that due regard for the welfare and safety of each individual patient is paramount.

3. Considered the determination and definition of death, and adopted this statement: "The cause of death must be evident and of an irreversible type. The fact of death must be established by adequate, current and acceptable scientific evidence in the opinion of the physicians making the determination. The determination of death in organ donors must be made by no less than 2 physicians not associated with the surgical team performing the transplant."

4. Heart transplantation will always be limited by a shortage of potential donors. Basic research into the causes of cardiovascular disease should not be neglected, since the only ultimate solution to the problem lies in its prevention.

5. Public awareness and attention to human heart transplantation have been almost without parallel in medicine. It is imperative that the public be informed of the limitations, as well as the potentialities, and that reasoned and informed confidence in the medical profession not be impaired.

The House also approved the Uniform Anatomical Gift Act and urged each state medical association to give it careful consideration "with a view to seeking its adoption in its state."

Adopted was a report of the Committee on Health Care Financing pertaining to the use of Federal income tax credits for the purchase of health insurance. The House reaffirmed its action taken at the 1968 Annual Convention and resolved again that the AMA "vigorously promote the enactment of Federal legislation which would translate the concept of income tax credits for health insurance premiums into law."

The Board of Trustees was asked to expand existing programs to study health care costs, define major categories of health care expenditure, and to disseminate the findings to constituent societies, news media, and governmental authorities.

Recognizing that the Blue Shield program advertising may be misinterpreted by the public, the House resolved that "any references to 'paid-in-full' coverage clearly identify those services which are indeed covered on a 'paid-in-full' basis and also identify the circumstances under which those services must be rendered."

In other actions the House urged all voluntary health insurance organizations to offer reinstatement of all contracts previously cancelled or converted because the individual was eligible for Medicare. The House reaffirmed its belief that voluntary health insurance is the most acceptable means of financing health care.

The Council on Medical Education's "Special Requirements for Residency Training in Family Practice" was adopted. The House resolved that the AMA "affirm the importance of providing appropriate recognition for family physicians through approval of a primary specialty board for family practice and that the Council on Medical Education be encouraged to continue its efforts with the American Academy of General Practice and the AMA Section on General Practice to achieve this goal."

Among other actions, particularly aimed at patient care and public well-being, the House:

— Adopted a report on the AMA's continuing concern with obesity treatment.

— Proposed a meeting among concerned groups to review a revised certificate of live birth.

— Resolved that the AMA again urge its members to "take a strong stand against smoking by every means at its command."

— Urged appropriate state and Federal officials to work toward adoption of the International System of Highway Signs which avoids the use of language.

The House adopted a Board of Trustees' report offering comments on many of the recommendations of the "Millis Report."

A program for formal recognition by the AMA of physicians who participate in continuing medical education was adopted.

Reinstitution of the Medical Education for National Defense program was recommended as was "medical school expansion to include selected, service career-oriented students."

The House agreed with the recommendation of the Council on Health Manpower regarding need for physician supervision of paramedical personnel.

"Essentials of Approved School of Medical Technology" and "Essentials of an Accredited School of Radiation Therapy Technology," as revised by the Council on Medical Education, were adopted by the House.

Several resolutions relating to Medicare and Medicaid were adopted. Among these was the charge that the AMA "exert every effort to bring about the elimination of unnecessary documentation of medical services by the physician, hospital and fiscal intermediary on Medicare and Medicaid patients." All physicians were reminded "that as free men and women they have no obligation to accept employment and remuneration under any conditions other than those arrived at by agreement between the physician and the recipient of his service."

State and county medical societies were urged to establish uniform membership classifications based on AMA membership categories described in the By-laws.

Following the adoption of 3 resolutions commending Dr. F. J. L. Blasingame for his services to the AMA, Dr. Blasingame addressed the House at its opening session.

The House recommended to the Board of Trustees "that the office of Executive Vice President be filled, if possible, by a Doctor of Medicine who is an active member of the AMA at the time of his appointment and who possesses the necessary managerial qualifications."

After extensive discussion in reference committee and on the floor of the House, it was resolved that every county and state medical society initiate and maintain a "continuing program of active liaison with students at medical schools within their jurisdictions, preferably through active functioning chapters of S.A.M.A."

The House went on record favoring exploration of "more uniform licensure reciprocity among all states."

A definition of 'usual,' 'customary' and 'reasonable' fees was adopted by the House: "Usual" is the fee charged for a given service by an individual physician, i.e., his own usual fee. "Customary" is defined as the range of usual fees charged by similar physicians for similar services in that locale. "Reasonable" is that fee which meets the above 2 criteria or, in the opinion of a responsible review committee, is justified by special circumstances in a particular case. The House also resolved that "whenever these terms are used in contracts or laws, that they be specifically defined in those documents."

A report on the AMA-ERF and a financial report on the Institute for Biomedical Research were adopted by the House. Dr. George W. Beadle, former President of the University of Chicago, was introduced to the House at its opening session, on which day he assumed directorship of the Institute.

The House of Delegates authorized the Speaker to appoint a liaison committee of 10 members of the House to "meet during the time of each Convention of the House, or more often if necessary, with the President and Directors of the AMA–ERF and the Director of the Institute for Bio-

Medical Research for review of current programs of the AMA–ERF and consideration of suggestions for broadening the base of support for the AMA–ERF, and to report the results of such meetings to the House at each Convention." Dr. Camalier was appointed a member of this committee.

Dr. G. Arnold Bargen, of Riverside, Calif., was chosen to receive the AMA Distinguished Service Award, to be presented at the 1969 Annual Convention.

John D. Rockefeller III, Chairman of the Board of the Rockefeller Foundation, was selected to receive the Citation of a Laymen for Distinguished Services, also to be awarded in July of 1969.

John J. Hughes, M.D., *Delegate*
C. Willard Camalier, Jr., M.D., *Delegate*

PHYSICIANS' PLACEMENT SERVICE

The Medical Society's **Physicians' Placement Committee** maintains a services to benefit its members and other physicians by locating suitable openings, assistants or associates. It will also assist Government agencies and industrial organizations to secure physicians for their Medical Departments. Call 223–2230—ask for Placement Service.

HEALTH DEPARTMENT NOTES

Minimal Care Unit

Among significant new programs established at D. C. General Hospital since the completion of that institution's renovation and new construction is the Minimal Care Unit. Because competent, progressive patient care is achieved in a large part through adjustment of care units to individual needs, D. C. General Hospital endeavors to place each patient in areas which best meet his particular medical and nursing requirements.

Thirty beds were set aside for the Minimal Care Unit about a year ago. Last summer that number was increased to 78 beds. The unit is staffed by licensed practical nurses. Registered nurses thus are freed to concentrate on meeting the needs of the acutely ill patients.

Attention in the Minimal Care Unit is focused on patients who for the most part are self-sufficient but require convalescent or diagnostic care. Once having passed the acute stage of an illness in intensive care, the recovery room, or a cardiac care unit, a patient may be transferred to an intermediate care unit and then to the Minimal Care Unit.

Among those assigned to Minimal Care might be the cardiac patient who must learn, under close supervision, the degree of physical activity in which he may safely indulge and the type of diet suitable for his condition. Another patient might be the partially regulated diabetic who requires precise dietary management, frequent laboratory tests, and adjustment of insulin dosage, as well as instruction on dietary practices and self-administration of insulin.

Only a moderate amount of direct nursing care, usually none of an emergency nature, is required by patients assigned to the Minimal Care Unit. Every effort is directed toward increasing the self-reliance of the patients. Patients, both ambulatory and those in wheel chairs, are expected to keep their bed areas neat and clean. Their meals are served in a special section of the hospital's new cafeteria.

Many patients who return to the hospital as outpatients in the clinics and others may utilize services available at Health Department neighborhood clinics. Because the Minimal Care Unit is the final step in the patient's hospital confinement, it is here that he receives instruction in the care he may require as an outpatient. Patients also are advised on suitable daily routines during recuperation, including rest, exercise and recommended food intake.

Since its establishment the Minimal Care Unit has generally been utilized to full capacity, with most patients remaining, on the average, for a week before discharge from the hospital. The exception to the average has been the orthopedic patient, who usually requires additional time in the unit.

We believe that the Minimal Care Unit helps us to better utilize beds and personnel, make greater use of the hospital resources for the medical care and treatment of the indigent, and, hopefully, reduce the number of emergency registrations, hospital readmissions and outpatient visits.

Murray Grant, M.D., M.P.H.
D. C. Director of Public Health

CORRESPONDENCE

Washington, D. C., December 2, 1968

To Chief John B. Layton,
Metropolitan Police:

It has been brought to my attention that 4 members of our Medical Society have experienced robberies in the 10-day period ending November 27, 1968. The office of each of these physicians is located in the Capitol Hill area. These physicians as well as other physicians in the area are distressed and quite concerned about the situation.

As Executive Director of the Medical Society, I certainly want to do everything possible to encourage their retaining their offices in the District. I am sure that you are aware that already there is a shortage of physicians in District Proper. In so far as this rash of robberies and assaults is concerned, I can do nothing for our membership but to implore you to give this specific area as much additional protection as is possible.

I should appreciate hearing from you with advice that I might pass on to members. Thank you very much for your coöperation.

Thomas Sadler
Executive Director,
D. C. Medical Society

Washington, D. C., December 20, 1968

To Mr. Sadler:

I have for acknowledgment your letter of December 2, 1968, relative to members of the Medical Society of the District of Columbia being victimized at the hands of armed robbers. I can readily understand the distress and concern that is being experienced by your membership, and I can assure you that I too am disturbed by such incidents.

The Police Department has taken a positive stand in combating the rising crime picture. Specific attention is being given to robberies, assaults, and other crimes against persons. Reinforced patrols, utilizing uniform and casual clothes tactical forces, are deployed on the basis of patterns established by study of the statistics of such crimes. I must say with all candor that, while such deployment is experiencing some success, much more must be done to strengthen the total law enforcement process if we are to provide reasonable safety to our citizens.

Whenever the crime problem becomes acute, the citizen always appeals to the police, and rightly so. However, it must be remembered that the process of criminal justice includes, in addition to the police, the prosecutor's office, the courts, the correctional institutions, and the probation and parole authorities. While much still remains to be done to strengthen our police services, and while I am personally dedicated to that end, it must be noted that the backlog of criminal cases that has accumulated prevents the prompt handling of new cases being presented at the rate offenders are now being apprehended.

The report of the President's Commission on Crime in the District of Columbia states:

"Courts and prosecutors can have little effect on crime if they are unable to deal fairly and promptly with persons arrested by the police. A decline in felony prosecutions, dispositions influenced by extraneous factors, and mounting case loads and delays are some of the principal problems which currently characterize the prosecutions of felony offenders in the District."

I want you to know that I view the practical application of provisions of the Bail Reform Act in the District of Columbia as a main factor in the incidence of armed robbery, and have recommended that the modification be included in the District's legislative program. Support by members of your Society in this endeavor would be helpful. Support of proposals to provide additional personnel and facilities for the courts to insure swift, sure justice would also be helpful.

Thank you for your interest in this matter, and please be assured of my continued concern for the safety and welfare of all citizens of the District of Columbia.

John B. Layton
Chief of Police,
D. C. Metropolitan Police Department

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►NEW MEMBERS

Active

Margaret Roberts Abernathy, M.D. Office: 3800 Reservoir Road, N.W. Born in Washington, D. C. Medical degree: Medical College of Virginia, 1964. Specialty: Neurology.

Cheston Milton Berlin, M.D. Office: 901–23rd Street, N.W. Born in Pittsburgh, Pa. Medical degree: Harvard University, 1962. Specialty: Pediatrics.

Robert P. Crawford, M.D. Office: 4059 Minnesota Avenue, N.E. Born in Jacksonville, Fla. Medical degree: Howard University, 1944. Specialty: Pediatrics.

Justiniano Fernandez-Campa, M.D. Office: National Institutes of Health. Born in Cartagena, Spain. Medical degree: University of Madrid, 1960. Specialty: Neurology.

Stephen Jay Kurzbard, M.D. Office: 2141 K Street, N.W. Born in Brooklyn, N. Y. Medical degree: Albert Einstein College of Medicine, 1962. Specialty: Radiology.

Walter Howard Levy, M.D. Office: 3601 Davis Street, N.W. Born in New York City. Medical degree: University of Maryland, 1929. Specialty: Anesthesiology.

Caro Elise Luhrs, M.D. Office: Georgetown University Hospital. Born in Dover, N. J. Medical degree: Harvard University, 1960. Specialty: Internal Medicine.

Theodore R. Mahaffey, M.D. Office: 1915–16th Street, N.W. Born in Columbus, Ohio. Medical degree: Howard University, 1961. Specialty: Obstetrics and Gynecology.

Raymond Joseph McGill, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in New York City. Medical degree: Johns Hopkins University, 1960. Specialty: Dermatology.

Karin D. Becker Nelson, M.D. Office: 1212 V Street, N.W. Born in Chicago, Ill. Medical degree: University of Chicago, 1957. Specialty: Neurology.

Eleanor A. Sorrentino, M.D. Office: 3000 Connecticut Avenue, N.W. Born in Brooklyn, N. Y. Medical degree: Harvard University, 1962. Specialty: Psychiatry.

Associate

Eugene R. Atherton, M.D. Office: 431 Frederic Street, Gaithersburg, Md. Born in Washington, D. C. Medical degree: Harvard University, 1950. Specialty: Internal Medicine.

Maury L. Hanson, M.D. Office: 5021 Seminary Road, Alexandria, Va. Born in Washington, D. C. Medical degree: Cornell University, 1955. Specialty: Neurosurgery.

Arthur Edwards Wentz, M.D. Office: 2007 Eye Street, N.W. Born in South Charleston, Ohio. Medical degree: Ohio State University, 1935. Specialty: Neurosurgery.

Resident-Intern

Mandell Don Stearman, M.D. Office: George Washington Hospital. Born in Washington, D. C. Medical degree: George Washington University, 1964. Specialty: Radiology.

Thomas Raney Wright, M.D. Office: Freedmen's Hospital. Born in Helena, Ark. Medical degree: Howard University, 1967. Specialty: Ophthalmology.

►DOCPAC BRIEFS

or

A Good Citizen Is an Involved Citizen

Dear Doctor:

Do you consider yourself a good citizen?

In my opinion, citizenship is not an individual, personal privilege to be neglected at will. Citizenship is a trusteeship—a trusteeship for people who cannot vote, for young people under the voting age, for people who are patients in hospitals and nursing homes. Citizenship is a trusteeship in behalf of all these people.

Physicians have been reluctant to become active in politics because some think there is something a bit shady about it and therefore do not want to become involved. They do not realize that if we are to preserve liberty it can only be done by exercising "eternal vigilance" in many ways.

Members of the new Congress now in session are listening to hear the voice of the people. If your voice and those of others who think as you do are to be heard, they can be heard only through political means.

Don't say you cannot afford the time to be politically active. The question really is whether you can afford not to take the time. Join with your other medical colleagues in effective political action by becoming a member of DOCPAC (the District of Columbia Political Action Committee).

And, dear doctor, remember that always in your professional life your wife has been a partner. Make her your "Partner in Politics" by choosing the family membership dues of $30.00. Start the New Year right. Include it in your check today along with your 1969 dues to the Medical Society of the District of Columbia.

Yours for good, representative government!

Mrs. Lawrence A. Rapee
Vice Chairman, D. C. Political Action Committee

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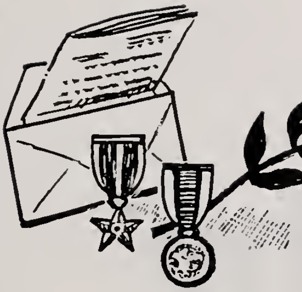


News & Personals

Summary of Executive Board Actions

Proceedings of December 16 Meeting

For the last dinner meeting of the year members of the Executive Board were invited to the home of the Chairman, Dr. Edward W. Nicklas. Present were Drs. William S. McCune, Frank S. Bacon, Jed W. Pearson, Jr., Gudrun Augustin-Rueckert, Paul R. Wilner, John J. Hughes, Robert J. Coffey, Henry D. Ecker, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Present by invitation was Dr. Arthur E. Wentz, Program Coordinator, Metropolitan Washington Regional Medical Program. The meeting was called to order by Dr. Nicklas at 8:30 p.m.

The minutes of the November 25, 1968 Board meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

November	25	1969 Scientific Assembly Program Committee
December	3	Medical Bureau Committee
	4	Fee Review Committee
	5	Physicians' Placement Committee
	10	Board of Credentials Committee on Medicolegal Problems
	11	Committee on Mental Health
	12	Committee on Public Welfare

Board of Credentials: On recommendation of the Board of Credentials 11 applicants were elected to Active membership, 3 to Associate membership, and 2 to Resident-Intern membership. Their names appear on page 111. Approval was given to the following changes in membership status:

Transfers

Active to Associate: Philip A. Cox and Allen S. Cross
Associate to Military Status: Warren Harvey Heller

Resignations

Active: Charmian Elkes and George Szele
Associate: Thomas James Hartford and George Speck

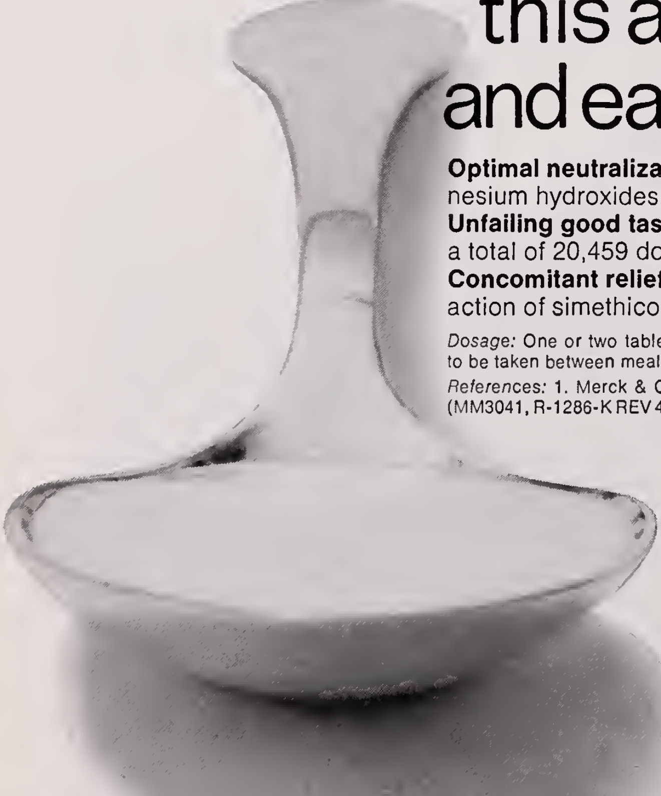
Regional Medical Program: Dr. Wentz gave a progress report on the activities of the Regional Medical Program. In his report he stated that a preliminary review of proposals is imperative. As a result of the discussion on this point a motion was made and carried that the Executive Board recommend to the advisory group that an ad hoc committee be established to screen and make recommendations on professional grants prior to submission to the advisory council.

Recognition to Harden and Weaver: The Board approved Dr. McCune's request that a framed certificate of appreciation be presented to both Mr. Frank Harden and Mr. Jackson Weaver for the entertainment they provided the Society during its 1968 Scientific Assembly.

Health Planning Council: Dr. Bacon presented some background information on the Health Planning Council. He explained that it was the same as the Comprehensive Health Planning organization of D. C. and indications were that it would gain momentum in 1969. He considered it important that the Society retain membership in the Council. The Board agreed that the Society should maintain its liaison with the Health Planning Council and concurred in Dr. Bacon's recommendation that Dr. William R. Felts be appointed the Society's representative. Dr. Bacon noted that Dr. John A. Kenney, Jr. represents the Regional Medical Program on the Council.

Luncheon Meeting with Dr. Grant: Dr. Bacon summarized matters discussed, December 13, with Dr. Murray Grant, D. C. Director of Public Health.

Medicaid. Since the Medicaid program began operation, October 1, 62,000 people have been declared eligible. He said 335 physicians have signed up; 78 physicians have sent in bills, 18 of which are from Children's Hospital, the only hospital that has signed a contract. The Department of Public Health expects to have all bills, around 26,500, paid by the end of the year. There are 3 reasons for the slow work in the Public Health



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References: 1. Merck & Co., Merck Chemical Division: Antacid Literature Survey, Rahway, New Jersey. (MM3041, R-1286-K REV 463.) 2. Danhof, I.E., report on file. 3. Hoon, J.R.: Arch. Surg. *93*:467 (Sept.) 1966.

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Department in regard to this program, as stated by Dr. Grant:

1. Public Welfare has to catch up.
2. Many of the bills that have come through are incorrect.
3. The checking process is slow.

The Health Department will not be able to pay more than 80 per cent of cost of outpatient care due to lack of funds. Dr. Bacon had suggested that the Public Health Department pay them on the basis of the Physicians' Fee Schedule. He said he would like to see all outpatient clinics, public clinics, and private physicians charge the same fees. Dr. Grant promised to study this proposal.

Neighborhood Health Centers (and Clinics). Dr. Grant reported that the Neighborhood Health Center program is going quite well. Some 5,000 patients had been taken care of in a month. The Health Department does not plan to expand the program until April, when it will be evaluated. Georgetown University had expressed an interest in this program and wanted to have a similar project in the Northwest Area. The Department of Public Health told Georgetown that it cannot expand the program now.

In July of 1969 the Department of Public Health will be taking over the old Hebrew Home for the Aged. According to present plans, a new building will be constructed by the Home.

Anacostia Clinic. Dr. Grant stated that the Public Health Department has no connection whatsoever with the Anacostia Clinic. A group came to see him, told him they were going to set up a clinic, and asked what the Department could do to help, but the Health Department never has had any part of this clinic.

Licensure Law. Dr. Grant said he would send the Society, for review, a final (latest) proposal in regard to the Licensure Law.

D. C. Health Foundation: A motion was made and carried that the Medical Society recommend to the Health Foundation that an annual contribution be made to AMA/ERF and that such donation be earmarked for local medical schools.

Martin Luther King Memorial Hospital: The Board reviewed correspondence submitted regarding the proposed Martin Luther King Jr. Memorial Hospital to be erected in Washington as a teaching hospital for Howard University College of Medicine. The Secretary was instructed to write a letter to the National Inter-Church Hospital Association, Inc., the sponsoring organization, stating that the Medical Society approves the proposal in principle if it meets the criteria of the Health Facilities Planning Council.

AMA-ERF Benefit

on

DOCTORS DAY, March 30, 1969

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6:30 to 9:30 p.m.

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The Secretary read a letter from Dr. Paul B. Cornely in which he expressed his appreciation for the Executive Board's thoughtfulness in sending him a congratulatory letter upon his being named President-elect of the American Public Health Association.

Dr. Nicklas, retiring Chairman of the Board, was presented with a gift by Dr. McCune on behalf of all Executive Board members in appreciation for his long and faithful service.

There being no further business, the meeting was adjourned at 10:25 p.m.

MEETINGS

Physical Fitness and Medical Aspects of Sports will be the subject of a program to be presented in the Medical Society's Exhibit Hall on Wednesday, March 5, at 7:30 p.m. In charge of the meeting is the Society's Committee on Medical Aspects of Sports, chairmaned by Dr. Stanford A. Lavine. All interested physicians and guests are invited to attend.

The Twelfth Annual Joint Cardiac Symposium, sponsored by the Heart Association of Northern Virginia, Inc., and the Washington Heart Association, will convene in the Persian Room of the Marriott Twin Bridges Motor Hotel (Virginia side) on April 9. The luncheon charge is $6.00. This is an all-day session, beginning at 8:45 a.m., with registration to open at 8 a.m. Members of the Medical Society, house staff, and medical students are cordially invited to attend. There is no registration fee.

GENERAL NEWS

The National Society for the Prevention of Blindness, Inc. is accepting applications for grants for scientific study which will contribute to the basic understanding of eye function and pathology and improve methods of diagnosis, treatment, and methods for the prevention of blinding eye diseases. Grants not exceeding $5,000 will be made for a 1-year period for projects not being financed by other sources. Renewals may be applied for at the end of the year. Application forms may be obtained by writing to the Society, 79 Madison Avenue, New York, N. Y. 10016. The next deadline for applications is March 1.

A **National Psoriasis Foundation** has been organized in Portland, Oregon, as an aid to psoriatics. Mrs. Larry Foster, its Executive Director, says the Foundation of 700 members is made up primarily of persons afflicted with psoriasis and physicians interested in treating the disease. It publishes a bimonthly bulletin. Offices are located at 6415 S.W. Canyon Court, Suite 250, Portland, Ore. 97221.

Sibley Hospital announces 2 administrative appointments: **Dr. Garth L. Jarvis, Executive Director, and Mr. Charles R. Blatchley, Administrator.** Both posts had been filled by Dr. John M. Orem, who was President of the Hospital from 1940 until his death, April 5, 1968.

Dr. Jarvis, an Active member of the D. C. Medical Society, received his medical degree from the University of Michigan. Since 1963 he has been Chief of Obstetrics and Gynecology at Group Health Association in Washington. Mr. Blatchley, a graduate of the University of Connecticut, has been Assistant Administrator of Sibley since August 1967. He holds an M.B.A. degree in hospital administration from George Washington University.

Two nearby county medical societies have new officers. **The Fairfax County (Va.) Medical Society** will be served during 1969 by:

Dr. Thomas M. Wright, Falls Church, President; Dr. Donald S. Thorn, Annandale, President-elect; Dr. Rolf A. Koehler, Fairfax, Vice President; Dr. Alan A. Mackintosh, Secretary; and Dr. William L. Bekestein, Fairfax, Treasurer.

New officers of the **Prince George's County (Md.) Medical Society** are:

Dr. William R. Greco, Riverdale, President; Dr. John R. Buell, Laurel, Vice President; Dr. S. Jack Sugar, Riverdale, Secretary; and Dr. Leon R. Levitsky, Mount Rainier, Treasurer.

Drs. Wright, Sugar, and Levitsky are Associate members of the D. C. Medical Society.

Georgetown University School of Medicine has received a $5,000 grant from Research to Prevent Blindness, Inc. to provide "maximum freedom for the pursuit of new concepts in eye research." Dr. James F. O'Rourke, Director of the Division of Ophthalmology, said that with this latest grant RPB has provided a total of $15,000 for the use of his research program over the past 3 years.

Two new departments have been established in the **Washington Office of the American Medical Association.** The Department of Congressional Liaison, headed by Harry Hinton, is under the direction of Joe Miller, Director of the AMA Division of Public Affairs. The Department of Executive Department Liaison, headed by Darrell Coover, is responsible to Dr. A. Rex Kirkley, Acting Manager of the Washington Office.

International Travel Forms may be validated at either of 2 offices operated by the D. C. Department of Public Health, one at 801 North Capitol Street, Room 407, and the other at 301 C Street, N.W., Room 6012. Offices are open from 8:30 a.m. to 4:15 p.m., Monday through Friday.

Georgetown University's 26-million-dollar **Progress Fund** has been augmented by a $36,000 contribution from Merck, Sharp & Dohme, of West Point, Pa. The funds will be used to expand the Medical Center, which is increasing its enrollment in the School of Medicine by 25 per cent.

Dr. Raymond L. White, Director of the Division of Environmental Medicine and International Affairs of the American Medical Association from 1961 to 1965, died in Boise, Idaho, December 18, 1968. At the time of his death he was a consultant to the AMA on socioeconomic activities, a position he had held since June, 1965.

PERSONALS

Dr. Charles A. Hufnagel has succeeded Dr. Robert J. Coffey as Chairman of the Department of Surgery of Georgetown University School of Medicine, effective January 1. Dr. Hufnagel, who joined the Georgetown faculty in 1950, will retain his positions of Chairman of the Division of Cardiovascular Surgery and Director of the Surgical Research Laboratory. A trustee of the American College of Cardiology, he is a member of the Board of Governors of the International College of Chest Physicians and President of the Washington Heart Association.

Dr. Hufnagel, Chairman of Surgery at Georgetown Medical Center

Dr. Coffey, also Professor of Surgery, who has headed the Department since 1947, relinquished the chairmanship to devote full time to patient care, teaching, and research. He was a member of the Board of Governors of the American College of Surgeons from 1959 to 1968, President of the Southern Surgical Association in 1967, and President of the Medical Society of the District of Columbia in 1965.

Dr. Thomas W. Mattingly joined the staff of the Washington Clinic as a consultant in cardiology on January 13.

As Brigadier General Dr. Mattingly held the post of Chief of Cardiology at Walter Reed General Hospital longer than any of his predecessors, during which time he trained most of the cardiologists now on active duty in U. S. Army hospitals. During his tour of duty at Walter Reed, and since that time, he has been Personal Physician to former President Eisenhower. After his retirement from the Army he was in charge of the training program at the Washington Hospital Center, later becoming the first full-time Chief of Medicine at that institution. More recently he has been Director of the Metropolitan Washington Regional Medical Program, from which duty he resigned, September 1, 1968.

Dr. Josephine E. Renshaw, Washington obstetrician, was elected President-elect of the American Medical Women's Association at its annual meeting in Boston, December 4–7, 1968.

Dr. Renshaw, President-elect of American Medical Women's Association

Dr. Renshaw has held many offices in Branch One, Washington D. C., including that of President. She has also served AMWA at the national level in several capacities, including Assistant Treasurer, Counsellor, and Chairman of the Finance Committee.

Dr. Renshaw is senior attending obstetrician on the medical staff of the Washington Hospital Center. She has served on many committees of the D. C. Medical Society, was chairman of its Committee on Public Information for 3 years, 1952–1955, and in 1964 was the first woman to be elected First Vice President of the Society. She is Secretary of the Board of Trustees of Group Hospitalization, Inc. of D. C. and is a member of its Medical Advisory Committee.

Dr. Carolyn S. Pincock, formerly an Associate member of the D. C. Medical Society, was elected Second Vice President of AMWA at the same meeting. She too is a Past President of Branch One. An associate attending physician at Children's Hospital, she also has a private practice in pediatrics.

Dr. Patrick J. Doyle is serving as President of the American Health Foundation for 1969. He will also serve as President and trustee of the Washington Area Division of the Foundation. Dr. Doyle is Professor and Chairman of the Department of Community Medicine and International Health at Georgetown University School of Medicine. He is also a member of the President's Committee on Mental Retardation. The American Health Foundation, with headquarters in New York, engages in research and education in the field of preventive medicine.

Dr. Jack J. Rheingold has been elected President of the Medical Board of the Washington Hospital Center, **succeeding Dr. Charles W. Ordman,** who is retiring after 3 terms in that office.

Dr. Rheingold, President of Medical Board at WHC

Dr. Rheingold, who has been associated with the Center since 1958, is Clinical Professor of Medicine at George Washington University School of Medicine. He is a consultant in hematology to the Walter Reed Army Medical Center, the National Institutes of Health, the Veterans Administration Hospital, and St. Elizabeths Hospital, and is a consultant to the Food and Drug Administration and the Department of Health, Education, and Welfare.

Other Medical Board electees were: **Dr. Melvin G. Alper,** ophthalmologist, First Vice President; **Dr. Bertle Nelson,** internist, Second Vice President; **Dr. Vernon E. Martens,** pathologist, Secretary; **Dr. Norman H. Horwitz,** neurosurgeon, Assistant Secretary; **and Dr. Leon Gerber,** general surgeon, Treasurer.

Commander N. A. Janovski, MC, USNR, recently Chief of Anatomic Pathology at the U. S. Naval Medical School in Bethesda, Md., is now in Omaha, Nebraska, where he has accepted the post of Professor of Pathology at Creighton University School of Medicine.

Dr. Francis P. Chiaramonte, Jr., Chairman of the Department of Urology at Morris Cafritz Memorial Hospital, has been named President of the Medical Staff **to succeed Dr. Frank S. Pellegrini,** who has served as the first President of the staff since 1965.

Dr. Chiaramonte, second physician to head Medical Staff at Cafritz Hospital

Dr. Chiaramonte, who holds a Master's degree in Public Health from Columbia University School of Public Health and Administrative Medicine, received his training in urological surgery at Georgetown University. He is associated with the Marlow Heights Diagnostic Center and is Clinical Instructor in Urology at George Washington University School of Medicine.

Dr. J. Sanford Young, internist, was elected Vice President of the staff **and Dr. Linwood L. Rayford,** general surgeon and Deputy Coroner of the District of Columbia, Secretary-Treasurer.

Dr. Homer L. Twigg, Jr., of Bethesda, Md., an Associate member of the D. C. Medical Society, is the newly appointed Chairman of the Department of Radiology at Georgetown University School of Medicine. A member of the Georgetown faculty since 1957, he has been Acting Chairman of the Department of Radiology since July 1, 1967, when he succeeded Dr. Willy Baensch, who retired. Dr. Twigg is consultant in radiology to the Veterans Administration Hospital, the National Institutes of Health, and St. Elizabeths Hospital.

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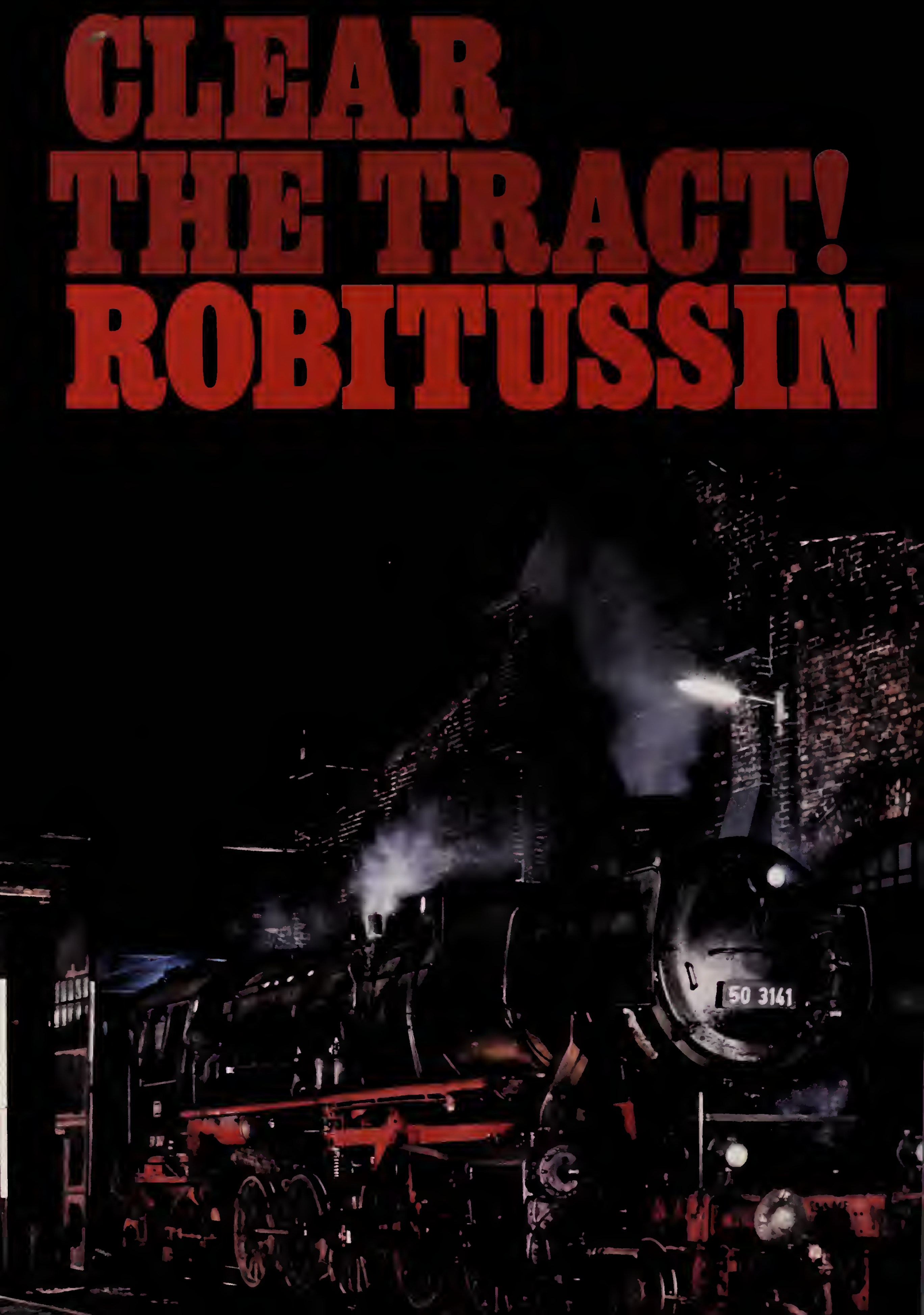

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OBITUARIES

Joseph Alexander Murphy, M.D.

(1878–1968)

Dr. Joseph A. Murphy, a Life member of the Medical Society of the District of Columbia, died, December 29, 1968. He resided at the Sheraton Park Hotel.

Dr. Murphy, a Washingtonian, was born, November 23, 1878. He graduated in medicine from George Washington University in 1905 and interned at the old Garfield Memorial Hospital.

His long practice in the District of Columbia began in 1905. He retired about 20 years ago after serving for many years as Chief Medical Inspector of the D. C. Public Schools.

He was elected to Active membership in the Medical Society of the District of Columbia in 1907 and the same year to the Medical Association of the District of Columbia, which later merged into the Medical Society. He became a Life member of the Society in 1948.

Surviving him are 2 sons, Joseph A. Murphy, Jr. of Washington, and Arthur R. Murphy, of Caracas, Venezuela.

William Godfrey Pogue, M.D.

(1921–1968)

Dr. William G. Pogue, Washington internist, died suddenly, December 28, 1968, at his home, 1701 Sycamore Street, N.W.

A native of Bedford, Va., Dr. Pogue was born, December 3, 1921. He received his B.S. degree in 1942 from Virginia State College and his medical degree in 1945 from Howard University College of Medicine. He interned for a year at Freedmen's Hospital and continued his training there during a 2-year residency. In 1948–49 he was resident physician at Provident Hospital in Baltimore. In 1951 he received a Master's degree in physiology from the University of Illinois, where he was a teaching fellow. As Captain in the Army Medical Corps, he served in Frankfurt, Germany from 1954 to 1956.

Dr. Pogue taught at Howard University in the Department of Physiology. At the time of his death he was on the staff of the Food and Drug Administration.

He was elected to Active membership in the Medical Society of the District of Columbia in 1954. He was a member of the American Medical Association, the National Medical Association, and the Medico-Chirurgical Society of the District of Columbia.

Surviving him are his wife, Mrs. Carolyn Brown Pogue, a son, Dion Alphonso, and a daughter, Ann Virginia, all at home; his mother, Mrs. Ethel Paige Pogue, of Bedford, Va.; a sister, Mrs. Barbara Shelton, of Montclair, N. J.; and a brother, Dr. Elbert Pogue, of Elizabeth, N. J.

William Brainin, M.D.

(1910–1968)

Dr. William Brainin, formerly Chief of Staff at Prince Georges County Hospital, died, December 10, 1968, at the Clinical Center of the National Institutes of Health in Bethesda, Md. He lived at 201 North Addison Road, Seat Pleasant, Md.

Dr. Brainin, a native of Hartford, Conn., was born, November 1, 1910. He received his early education in Washington, graduating from old Central High School in 1927. He received both his baccalaureate and medical degrees from George Washington University, the latter in 1934. He interned for a year at Gallinger (now D. C. General) Hospital and continued his training for 2 years at Grace Hospital in New Haven, Conn., the second year as resident physician. He then returned to Gallinger for additional work in pediatrics.

Dr. Brainin was a general practitioner in the Capitol Heights-Seat Pleasant area of Prince George's County for over 30 years. At the time of his death his offices were at 6124 Central Avenue, Capitol Heights. He was Chief of Medicine at Prince Georges General Hospital from 1956 to 1964 and Chief of Staff at the Hospital from 1964 to 1966.

Dr. Brainin had been an Associate member of the D. C. Medical Society since 1949. He was a member of the Medical & Chirurgical Faculty of Maryland, the Prince George's County Medical Society, and the Southern Medical Association. At the time of his death he was President of the George Washington University Medical Alumni Association. He was also a 32nd degree Mason and active in the Lions Club.

He leaves his wife, Mrs. Sally Brainin; 2 sons, Stanley, at home, and Paul, of Philadelphia; a brother, Herbert Brainin, of West Los Angeles, Calif.; and 3 sisters, Mrs. Esther Rothschild, of Silver Spring, Md., Mrs. Ruth Starin, of Rockville, Md., and Mrs. Mildred Rosoff, of New York City.

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Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue coated potassium-containing formulations immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Discontinue one week before electroshock therapy, and if depression or peptic ulcer occurs.
Use in pregnancy: Because chlorthalidone may cross the placental barrier and appear in cord blood and thiazides may appear in breast milk, this drug should be used with care in pregnant patients and nursing mothers. When used in women of childbearing age, the potential benefits of the drug should be weighed against the possible hazards to the fetus. Use of chlorthalidone may result in fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.
Precautions: Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. To avoid hypotension during surgery, discontinue therapy with this agent two weeks prior to elective surgical procedures. In emergency surgery, use, if needed, anticholinergic or adrenergic drugs or other supportive measures as indicated. Because of the possibility of progression of renal damage, periodic kidney function tests are indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.
Take particular care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Severe salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients.
Adverse Reactions: The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angiitis are possible.
Average Dosage: One tablet daily with breakfast.
Availability: Pink, single-scored tablets in bottles of 100 and 1000.
(B)46-600-C
For details, please see complete prescribing information.

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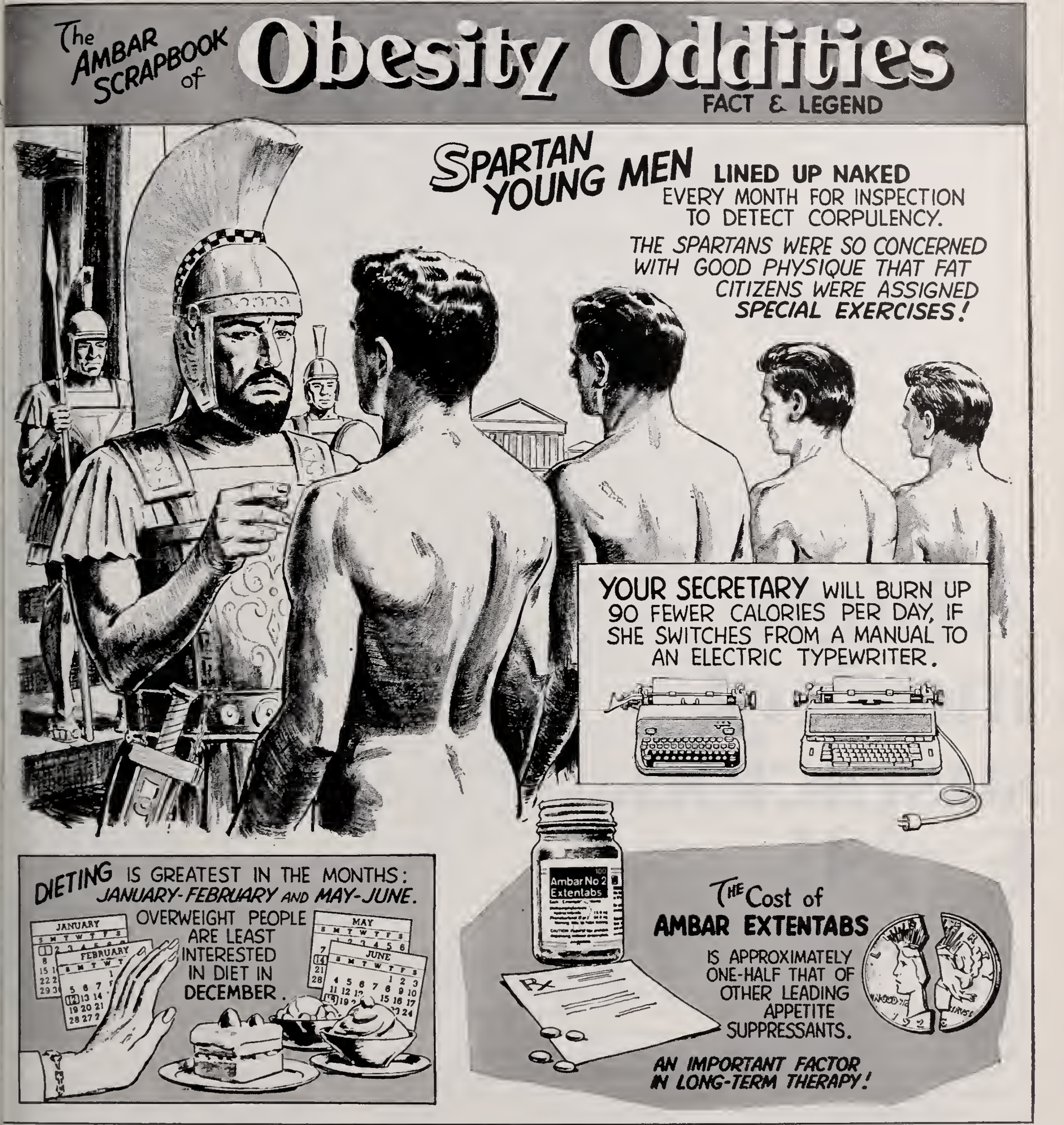
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References: 1. Vernier, R. L., in Patient Care Feature: *Patient Care, 1*:20 (Feb.) 1967. **2.** Beeson, P. B.: "The Infectious Diseases," in Beeson, P. B., and McDermott, W. (eds.): *Cecil-Loeb Textbook of Medicine*, ed. 12, Philadelphia, W. B. Saunders Company, 1967, p. 230.

Before prescribing, please consult complete product information, a summary of which follows:

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Contraindicated in sulfonamide-sensitive patients, pregnant females at term, premature infants, or newborn infants during first 3 months of life.

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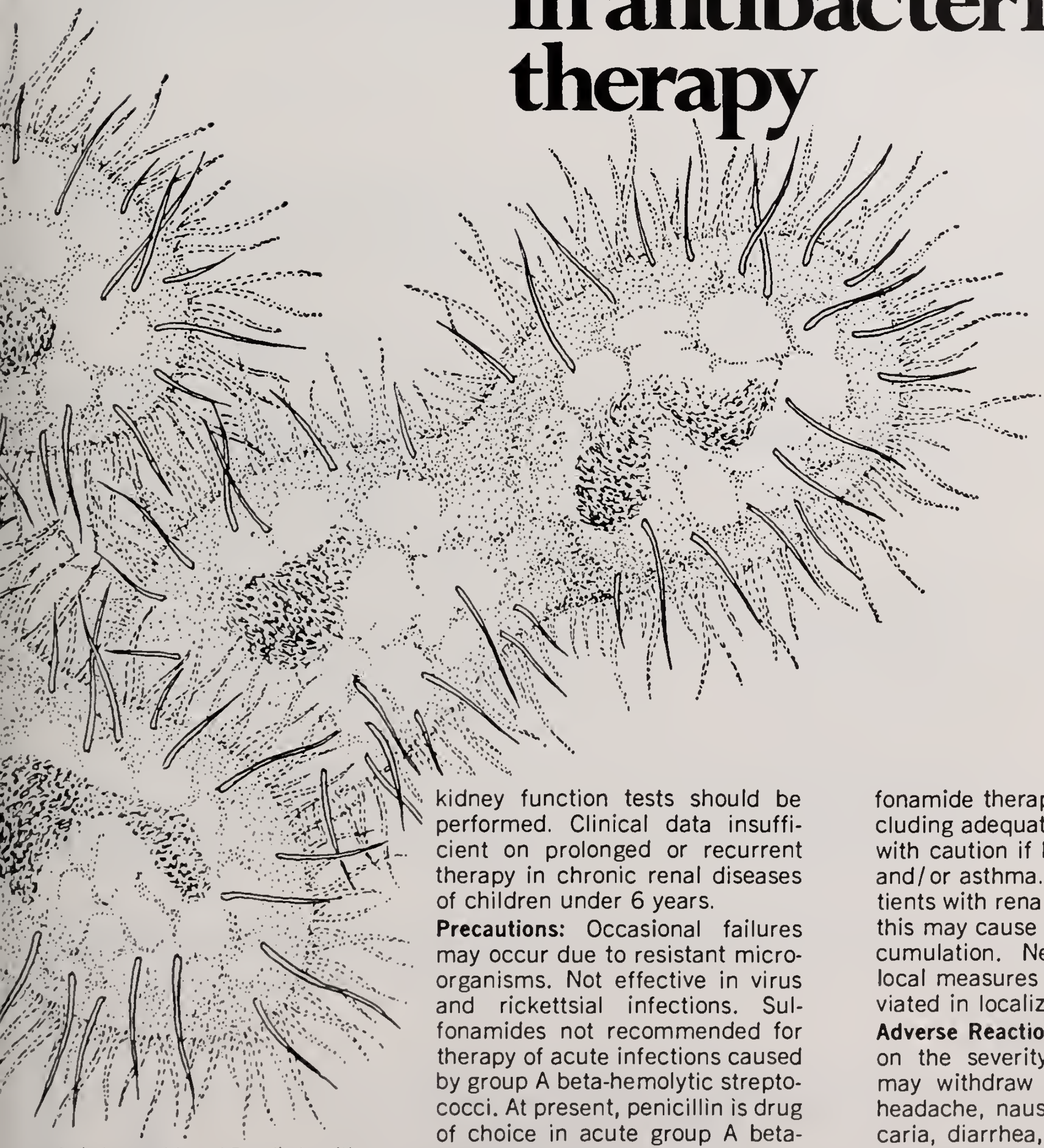

Artist's rendition of E. coli. As with most strains of E. coli, these have flagella and are motile.

kidney function tests should be performed. Clinical data insufficient on prolonged or recurrent therapy in chronic renal diseases of children under 6 years.

Precautions: Occasional failures may occur due to resistant microorganisms. Not effective in virus and rickettsial infections. Sulfonamides not recommended for therapy of acute infections caused by group A beta-hemolytic streptococci. At present, penicillin is drug of choice in acute group A beta-hemolytic streptococcal infections; although Gantanol has produced favorable bacteriologic conversion rates in this infection, data insufficient on long-term follow-up studies as to its effect on sequelae of rheumatic fever or acute glomerulonephritis. If other treatment cannot be used and Gantanol is employed in such infections, *important that therapy be continued in usual recommended dosage for at least 10 days.* Observe usual sulfonamide therapy precautions, including adequate fluid intake. Use with caution if history of allergies and/or asthma. Follow closely patients with renal impairment since this may cause excessive drug accumulation. Need for indicated local measures or surgery not obviated in localized infections.

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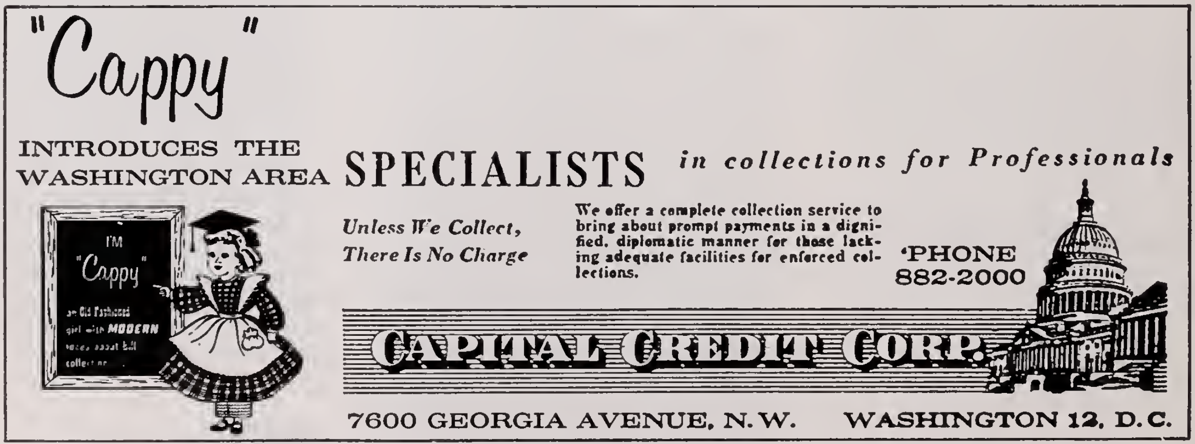
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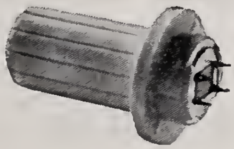

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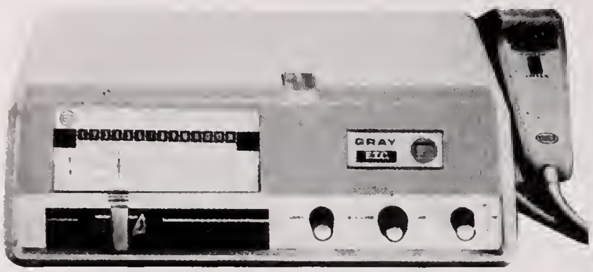

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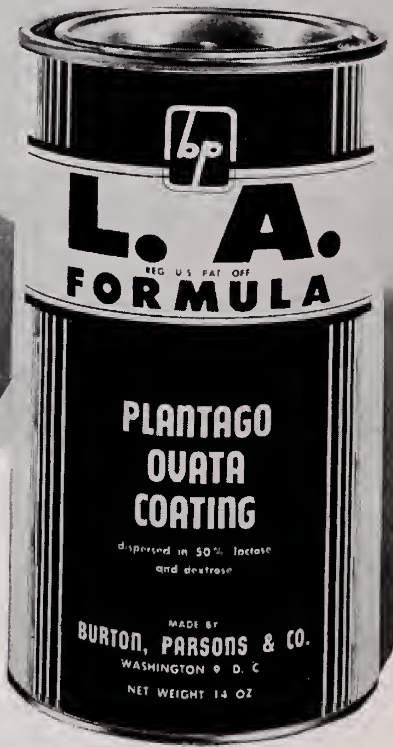
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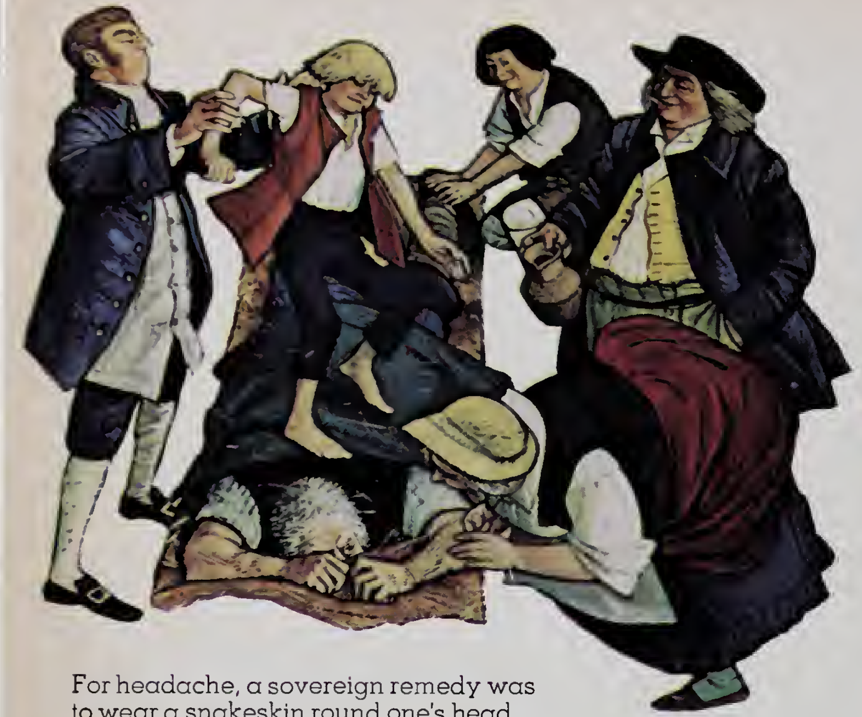
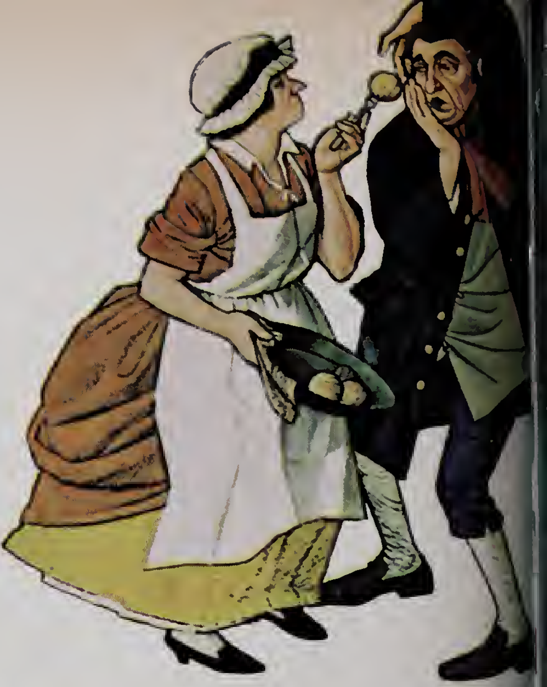
A once-popular treatment for back pains was to have the seventh son of a seventh son stand or walk on the patient's back.





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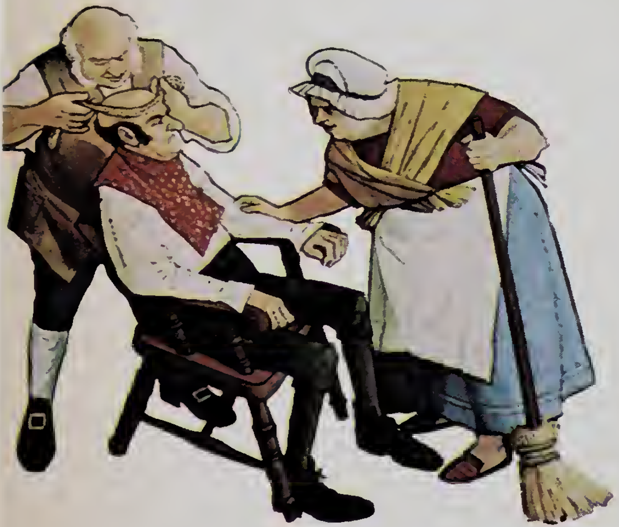

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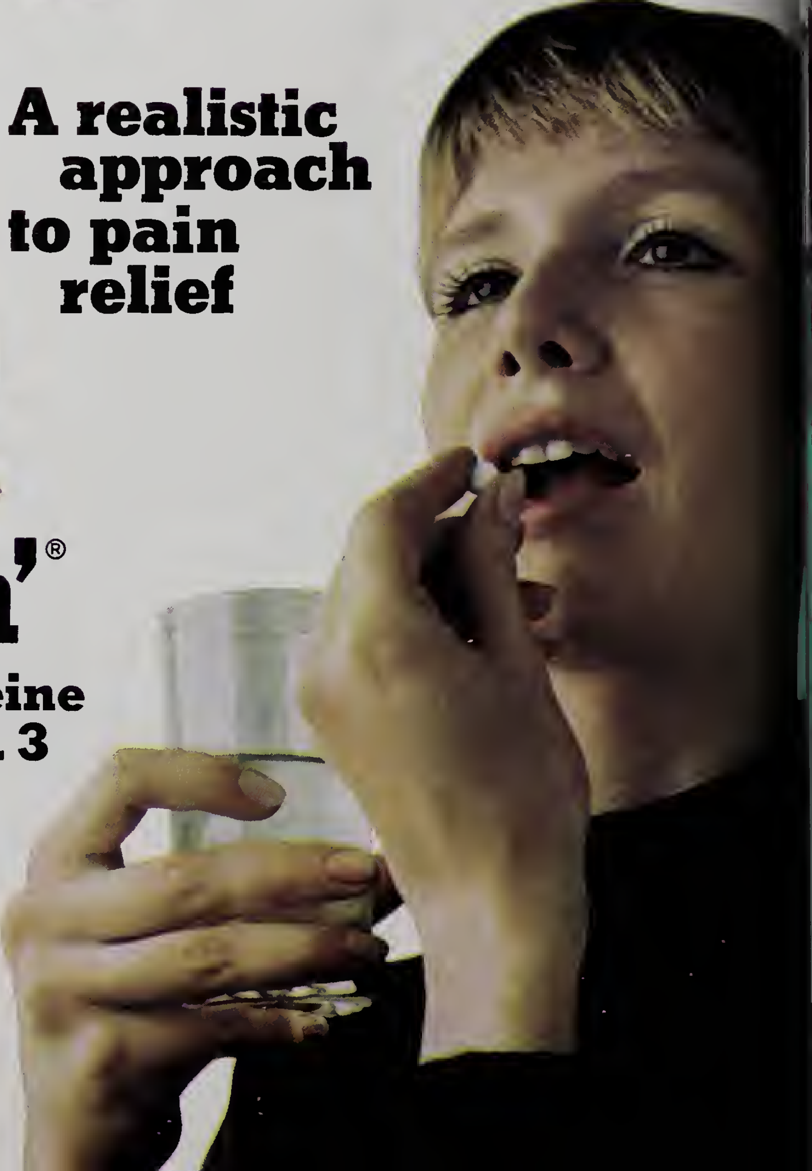

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Coronary Artery Ectasia

L. P. Kirschner, M.D., J. K. Perloff, M.D., and H. L. Twigg, M.D.

Roentgen Findings in Appendicitis

C. J. Tegtmeyer, M.D., J. R. Thistlethwaite, M.D., and T. F. Sneed, M.D.

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Lt. Comdr. M. M. Murdoch, N. A. Janovski, M.D., and Lt. Comdr. S. Joseph

Propranolol

M. Stampfer, M.D., and S. E. Epstein, M.D.

Life of Andreas Schnerch

M. Bartalos, M.D., and E. P. Bartalos

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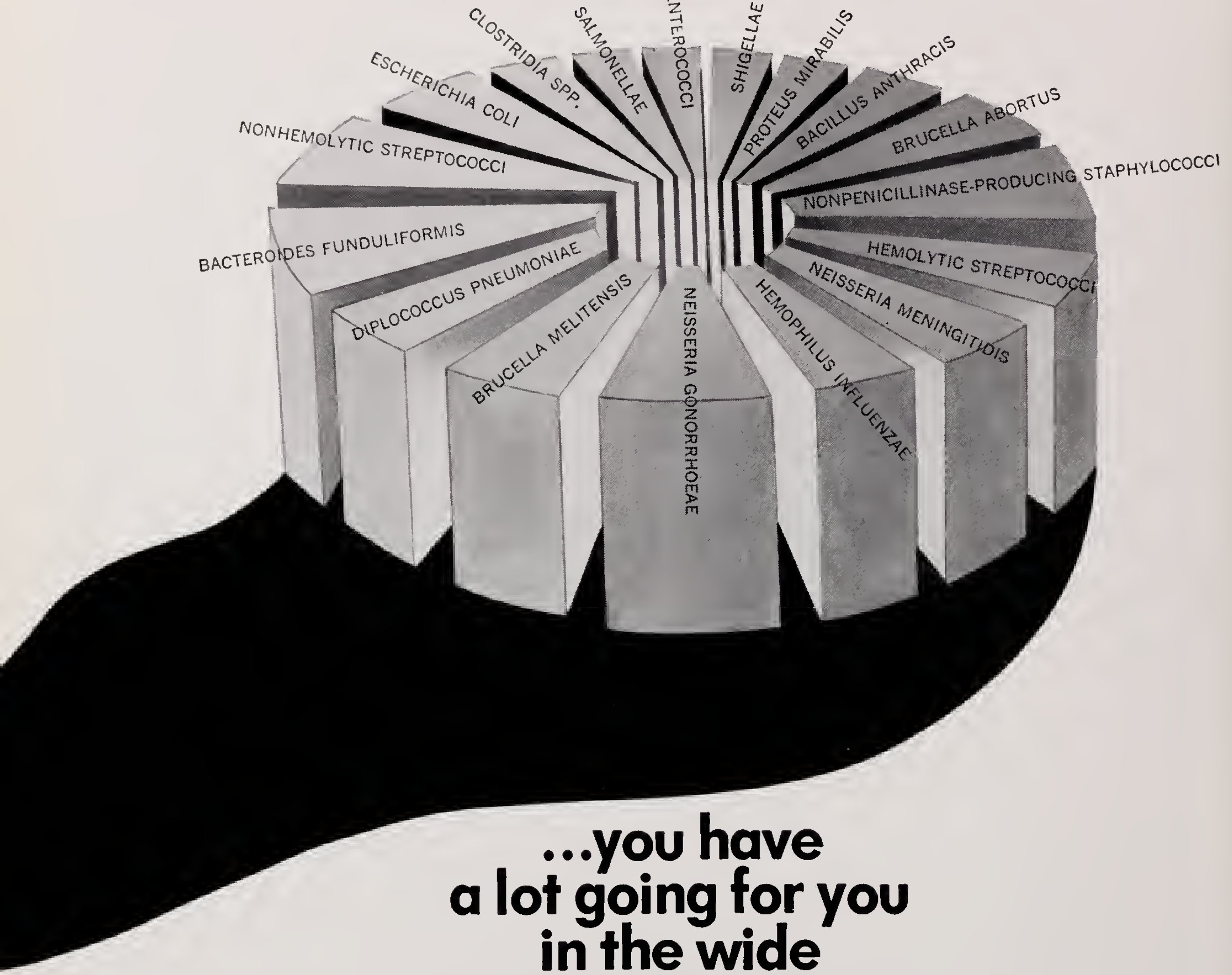
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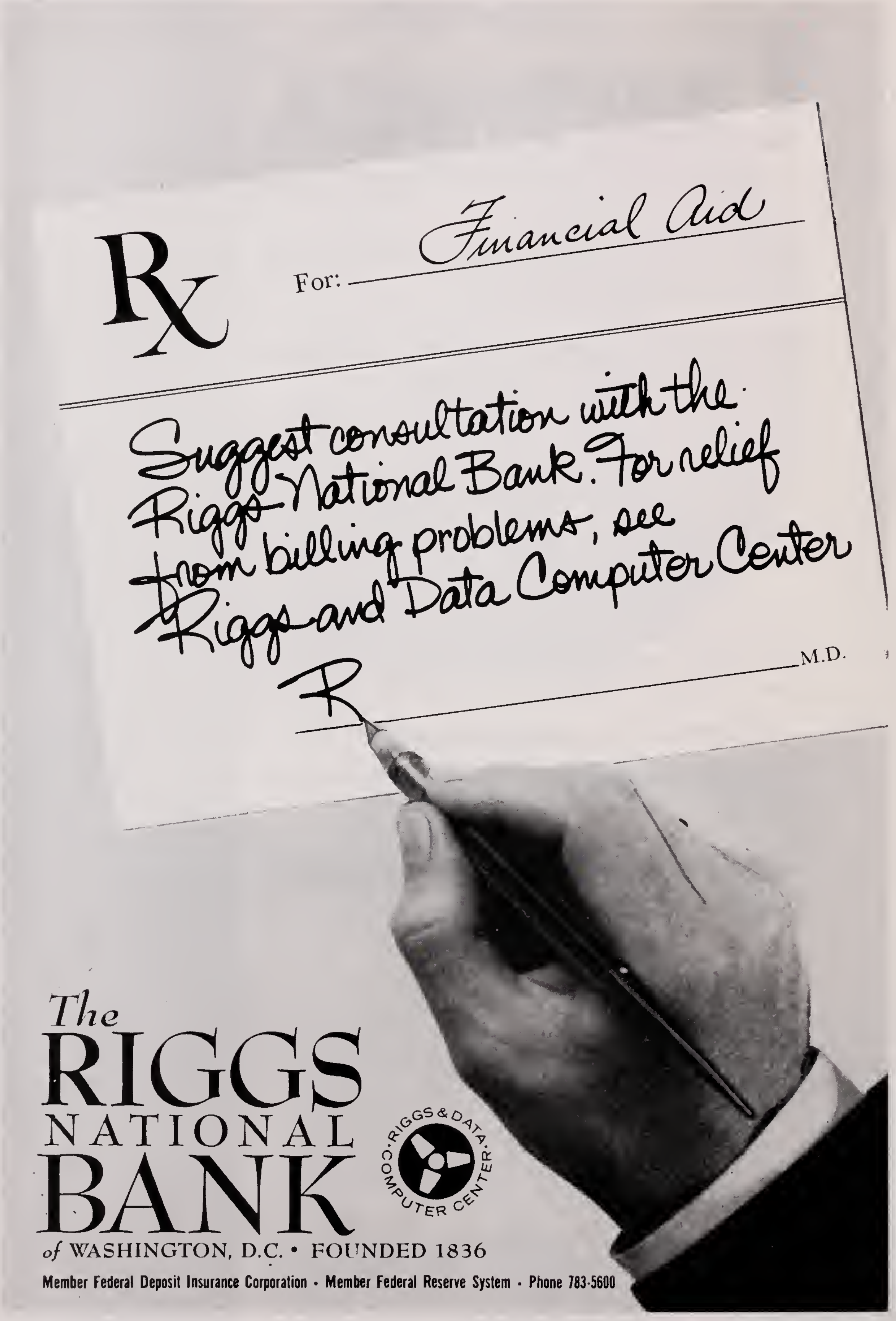
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Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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Book Reviews

Practical Psychiatry for the Internist. Douglas Goldman, M.D., and George A. Ulett, M.D., Ph.D. Price, $9.85. Pp. 168. St. Louis: Mosby, 1968.

"If only there were a book on psychiatry which was brief, without psychiatric jargon, and which could be applied by non-psychiatrists to their patients. . . ." This is such a book. The authors have presented psychiatry from a total-human-developmental viewpoint, much like its earlier theorists, without direct reference to the theories. Thus, the internist, general practitioner, and surgeon who cannot accept oral, anal, latent and genital stages of Sigmund Freud can understand his concepts.

The psychiatric aspects of specific areas of surgical and medical illness and treatment are explained with brief case illustrations. The entire realm of psychiatric disorders is clearly outlined, and topics on drug dependence and malingering are included, which brings the book up to today's problems. Psychotherapy, hypnosis, the physician's own feelings toward the emotions of his patients, and community mental health are covered. The chapter on pharmacology is most outstanding for both the psychiatrist and the non-psychiatrist. It lists psychiatric drugs, including type, usage and dose range, and they include the spectrum from barbiturates and chlorpromazine to the newer antidepressants, such as protriptyline.

For a clearer outline of psychiatry the table of contents should have listed the major topics in each chapter. The reading list should have included the works of the founders of modern psychiatry. If a chapter on obstetrical psychiatric problems were included, the book would have covered all fields of medicine. The authors, to their credit, I believe, almost achieved this. Thus the book should have been called "Practical Psychiatry for All Non-psychiatrists."

Burton S. Hutman, M.D.

Medical Pharmacology: Principles and Concepts, 4th ed. Andres Goth, M.D. Price, $13.50. Pp. 749. St. Louis: Mosby, 1968.

Dr. Goth's textbook illustrates a major problem of education in our medical schools. Pharmacology, principles and concepts necessary for the proper utilization of drugs, is taught during what has been called the "pre-cynical years." Little of it is carried over into the "cynical years" where our stethoscope-carrying junior or senior student is taught by a completely different set of professors and teachers, where much emphasis is laid upon years of "practice," "experience," and even "intuition."

Dr. Goth's present volume is trying to bridge the gap; it is trying to be many things to many people. To the young student it is trying to be an introduction to basic mechanism of drug action, to kinetics of drug distribution, to drug metabolism, pharmacogenetics, and enzyme induction. For the senior student it is trying to provide a compendium of therapeutic agents, with some brief background of molecular pharmacology. It includes chapters on poison and antidotes, prescription writing, and an all too brief chapter on drug safety and effectiveness.

It is plain to this reviewer that these ambitious efforts have not been entirely successful. The book reads too much like a continued series of headings and subheadings, with insufficient depth apparent at many points along the course. It does not provide guidance for the student in his clinical years because there has not been the right emphasis either in the organization of the book or in the respective emphasis on those drugs which are of key importance in the treatment of disease today and those which have fallen or should fall into disuse. There is only a half page for guanethidine but 3 pages on the Veratrum alkaloids. There are 7 pages on the mercurial diuretics and the carbonic anhydrase inhibitors and 4 pages on the thiazide diuretics. The intensive and often dangerous water-depleting action of ethacrynic acid is not stressed, and there is little on the interesting kinetics of furosemide.

On page 462 Dr. Goth says that diazoxide lowers blood pressure without having a renal effect. This is pertinently wrong, as seen by anyone who has ever used diazoxide in patients or, for that matter, in experimental animals, and there are several publications on that score.

The chapter on Chemotherapy is probably the best part of this textbook since it provides some well organized and lucid information in an important new field.

"Medical Pharmacology" suffers from the shortcomings of our time. Until we have a true integration between pharmacology and clinical medicine, until clinical medicine and pharmacology are taught simultaneously and in conjunction in the laboratory and at the bedside, we shall continue to have to review textbooks with the above shortcomings.

As long ago as 1900 John Jacob Abel, one of the first Professors of Pharmacology at Johns Hopkins, said clearly that pharmacology must be taught simultaneously with clinical medicine. How long do we have to wait to put our own house in order?

Frederick Wolff, M.D.

Atlas of Ear Surgery. William H. Saunders, M.D., and Michael M. Paparella, M.D. Price, $27.50. Pp. 363, with 163 plates of illustrations; line drawings by Beverly A. Etter. St. Louis: Mosby, 1968.

This book is a near-necessity for the apprentice otologic surgeon. Mrs. Etter's line drawings, comprising half the book, make each point distinct and unequivocal and are far better for teaching purposes than the halftones and photographs in recent texts and journal articles on the same material. Experienced otologists will find this material surprisingly complete with detailed coverage of rarely performed procedures such as endolymphatic shunts of Portmann and House and the temporal bone resection of Lewis. Nearly abandoned procedures, such as the Lempert fenestration and Rosen mobilization, are included as well as questionably received operations such as the sacculotomy of Fick.

The book is divided into these chapters: (1) chronologic outline, (4) temporal bone dissection, (3) pre- and postoperative care, (4) cosmetic and reconstructive surgery, (5) neoplasms and cysts, (6) infections, (7) Ménière's disease, (8) facial paralysis, and (9) conductive deafness.

Diagnosis, indications for, and choice of procedure are omitted; the preface suggests the Atlas should "be used in conjunction with other suitable references." Unfortunately, no bibliography or other references are listed, and the inexperienced or foreign student might wonder which Lewis, Rosen, or Shea he is seeking since the eponymic operations usually do not have even a first initial attached.

The ownership of this book is urged on all otologic surgeons; it supplements but does not replace the second edition of Shambaugh or the "Third Workshop on Microsurgery of the Ear," but 10 years hence it will still be an excellent workbook for the student.

William M. Trible, M.D.

Neuro-ophthalmology. Symposium of the University of Miami and The Bascom Palmer Eye Institute. Volume IV. Edited by Lawton Smith, M.D. Price, $31.50. Pp. 413, with 275 illustrations. St. Louis: Mosby, 1968.

Each January for the last 4 years, taking advantage of the Florida sunshine and of neuro-ophthalmologic talents throughout the U.S.A., the University of Miami has sponsored a clinical neuro-ophthalmology course under the direction of Dr. J. Lawton Smith. This book makes available the papers presented at the 1968 meeting as well as specially solicited articles designed to review recent developments in the field.

Some of the topics will be of general interest to others than those with a special commitment to neuro-ophthalmology. General ophthalmologists and internists, for instance, would do well to review the chapters on temporal arteritis and extracranial occlusive vascular disease. The discussion of progressive external ophthalmoplegia will be of special value to ophthalmologists, as well as the review of the agnosias (of value at least to those who don't already know what prosopoagnosia means). Neurologists, on the other hand, should be aware that eye-researchers have shown that intact living spirochetes can be present in the eye (and central nervous system?) even after routine courses of penicillin therapy. Staggering implications to that, and much more will be written about that in the future, I'm sure.

This is a good book to browse in, but I have to object to the price. For a relatively slim volume, $31.50 is so inflated that I am afraid the book will not get the general distribution it deserves.

Ronald S. Fishman, M.D.

Handbook of Pediatric Medical Emergencies, 4th ed. Charles Varga, M.D., and 14 contributors. Price, $19.75. Pp. 694, with 120 illustrations. St. Louis: Mosby, 1968.

The new fourth edition of "Pediatric Medical Emergencies" by Charles Varga is an outstanding example of today's "Handbooks." Bound and printed in a quality manner it will withstand the rigors of constant use by the young men and women in medicine for whom it offers the most.

The contributing authors are also of high quality, and each chapter succinctly outlines an excellent course of action for pediatric emergencies. Not the least of its many fine points is the format which directs the reader quickly to the desired information. Care is given throughout to the understanding of metabolic requirements which are dependent on weight and surface area rather than age. The appendix contains a wealth of information which should be at hand for all who care for infants and children. Ideally, normal values for venous and arterial blood gases should have been included.

While in general the thrust of this handbook is directly toward "medical" emergencies there is necessarily some reference to conditions which require surgical therapy. These have been presented in as noncontroversial a manner as possible.

This edition is highly recommended as a quick reference for students and house staff and as excellent review material for the practicing physician and surgeon.

J. E. McClenathan, M.D.

Pediatric Cardiology. Edited by Hamish Watson, T.D., M.D. (Ed.), F.R.C.P. (Ed.), M.R.C.P. (Lond.). Price, $36.50. Pp. 996, illustrated. St. Louis: Mosby, 1968.

The editor, Hamish Watson, is Senior Lecturer in Clinical Cardiology and Paediatric Cardiology at the

(Continued on page 10)

Book Reviews

(*Continued from page 9*)

University of Dundee. He notes in his preface that many excellent monographs are available in this field but that all are North American and that each represents the work of a single large center. His aim, therefore, is to compile a standard work of reference in a swiftly expanding field using the contributions of an international group of cardiologists, each writing on a subject of his special interest. Contributions come predominately from the United States and Great Britain, but also included are Holland, Belgium, Sweden, Nigeria and Ethiopia.

The book has been well edited to eliminate duplication and contradiction. Illustrations are abundant and excellent in quality. The index is adequate.

A valuable feature of the book is the new information contained in the following chapters:

1. Embryology.
2. Clinical Anatomy of the Heart. This chapter is concerned with the comparative topographical anatomy of the human heart from fetal life to maturity.
3. Foetal Circulation, Circulatory Adjustments after Birth and the Influence of Congenital Heart Lesions on Pulmonary Haemodynamics.
4. Pulmonary Circulation in Pathologic States. This is a useful discussion of the hemodynamics of various pathologic pulmonary conditions including hyaline membrane disease.
5. Cardiovascular Malformations in Association with Chromosomal Aberrations.
6. Systemic Hypertension in Children.
7. Physical Injuries to the Heart.
8. Paediatric Cardiology in the Tropics. In addition to discussing such unfamiliar entities as infantile beri-beri and protein caloric malnutrition, this chapter also calls attention to the common types of acquired heart disease which occur both in tropical and temperate zones.
9. Social Aspects of Paediatric Cardiology.

This is clearly not a book for the novice. This fact is not stated in the preface but becomes quite evident in the brief chapter on Cardiac Catheterization and Angiocardiography written by the editor. He discusses neither basic principles, techniques, indications, risks nor interpretation of data, stating that these are available in other texts. Although catheterization findings are discussed under the various congenital defects, nowhere in the book are normal pressures and oxygen saturations stated. There is no chapter on physical examination. The chapter on Radiology of the Heart contains no illustrations of normal hearts. The excellent chapter on Electrocardiography in Infants and Children is an exception to this neglect of the normal because there are tables of normal values as well as discussion of the normal tracing.

The above statements do not imply criticism but are offered only to make it plainly understood that the book is not intended as an introductory text. This monograph can be highly recommended as a comprehensive reference for the physician who has some basic knowledge of pediatric cardiology.

Althea D. Kessler, M.D.
Roland B. Scott, M.D.

Drug Responses in Man. A Ciba Foundation Volume. Edited by Gordon Wolstenholme and Ruth Porter. Price, $13.00. Pp. 257, with 23 illustrations. Boston: Little, Brown, 1967.

This book is a collection of articles concerning the many variables as they relate to the use of drugs in man. Each topic by an author is followed by a general discussion, with all of the authors participating and offering comment. The symposium is chaired by W. Modell, Department of Pharmacology, Cornell University Medical College.

The symposium consists of 12 major topics and covers much in the way of practical therapeutics as it relates to allergy, idiosyncrasy, cross-reaction, and toxicity.

Despite the fact that many of the volumes of the Ciba Foundation are primarily oriented toward basic science, this particular volume has a great deal of practical application to the practicing physician in this day of polypharmacy.

Some of the basic difficulties that the clinical investigator has with the Food and Drug Administration are discussed. The problem of animal testing and the application of these results to human pharmacology are dealt with at some length.

Discussions of such things as excretion, storage, metabolic inactivation of drugs, etc., shed a great deal of light on what is thought to be individual human variation in response to the same drug. The interactions of various drugs causing either enhancement or inappropriate effect from the combination are well illustrated. Such practical examples as the use of the barbiturates with the Coumadin® drugs, the oral hypoglycemic agents with phenylbutazone, and many others are discussed.

John J. Lynch, M.D.

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Use in pregnancy: Because chlorthalidone may cross the placental barrier and appear in cord blood and thiazides may appear in breast milk, this drug should be used with care in pregnant patients and nursing mothers. When used in women of childbearing age, the potential benefits of the drug should be weighed against the possible hazards to the fetus. Use of chlorthalidone may result in fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.
Precautions: Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. To avoid hypotension during surgery, discontinue therapy with this agent two weeks prior to elective surgical procedures. In emergency surgery, use, if needed, anticholinergic or adrenergic drugs or other supportive measures as indicated. Because of the possibility of progression of renal damage, periodic kidney function tests are indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.
Take particular care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Severe salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients.
Adverse Reactions: The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angiitis are possible.
Average Dosage: One tablet daily with breakfast.
Availability: Pink, single-scored tablets in bottles of 100 and 1000.
(B)46-600-C
For details, please see complete prescribing information.

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DECLOMYCIN acts against many strains of
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most common invaders. In otitis media, where i
is difficult to isolate the causative organism, thi
coverage may be important. However, some stra
may be resistant and other pathogens can be
involved.

You've found the high serum levels of
DECLOMYCIN important, too. Its prolonged act
permits convenient 300 mg b.i.d. or 150 mg
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When specimens are obtainable, your culture
studies will indicate the usefulness of
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Effectiveness: DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines in infections caused by organisms sensitive to the tetracyclines.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—ano-
rexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enteroco
pruritus ani. Skin—maculopapular and erythematous rashes; a
case of exfoliative dermatitis has been reported. Photosensiti
onycholysis and discoloration of the nails (rare). Kidney—rise in E
apparently dose-related. Transient increase in urinary output, sc
times accompanied by thirst (rare). Hypersensitivity reactions—
caria, angioneurotic edema, anaphylaxis. Teeth—dental staining
low-brown) in children of mothers given this drug during the latter
of pregnancy, and in children given the drug during the neonatal
od, infancy and early childhood. Enamel hypoplasia has been se
a few children. If adverse reaction or idiosyncrasy occurs, discont
medication and institute appropriate therapy. Demethylchlort
cycline may form a stable calcium complex in any bone-forming ti
with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Sh
be given 1 hour before or 2 hours after meals, since absorptic
impaired by the concomitant administration of high calcium con
drugs, foods and some dairy products. Treatment of streptoco
infections should continue for 10 days, even though symptoms
subsided.

DECLOMYCIN®
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Capsules: 150 mg; **Tablets:** film coated,
mg, 150 mg and 75 mg of demethylchlort
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/hen stress is situational—environmental pressure, orry over illness—the treatment often calls for an nxiety-allaying agent which has a prompt and redictable calming action and is remarkably well lerated. BUTISOL SODIUM (sodium butabarbital) eets this therapeutic need.

fter 30 years of clinical use . . . still a first choice nong many physicians for dependability, safety and onomy in mild to moderate anxiety.

ontraindications: Porphyria or sensitivity to arbiturates.

recautions: Exercise caution in moderate to severe epatic disease. Elderly or debilitated patients may act with marked excitement or depression.

dverse Reactions: Drowsiness at daytime sedative ose levels, skin rashes, "hangover" and systemic sturbances are seldom seen.

/arning: May be habit forming.

sual Adult Dosage: As a daytime sedative,
5 mg. (¼ gr.) to 30 mg. (½ gr.) t.i.d. or q.i.d.

vailable for daytime sedation: Tablets, 15 mg. (¼ gr.),
mg. (½ gr.); Elixir, 30 mg. per 5 cc. (alcohol 7%).
UTICAPS® [Capsules BUTISOL SODIUM (sodium butabarbital)]
mg. (¼ gr.), 30 mg. (½ gr.).

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cNeil Laboratories, Inc., Fort Washington, Pa.

If you think the pink pill for U.R.I. symptoms is built for speed and endurance you're on the right track.

Here is a tablet that begins to relieve symptoms of upper respiratory infection quickly—a tablet that works for hours to make it easy for your patient to enjoy continuous relief.

Novahistine Singlet combines effective dosage of an antipyretic-analgesic with a vasoconstrictor-antihistamine formulation to relieve not only the congestion, but also the fever and the aches and pains that almost always accompany upper respiratory infections.

A total daily dosage of 3 or 4 tablets will normally provide the continuous relief your patient expects. Use with caution in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

PITMAN-MOORE Division of
The Dow Chemical Company,
Indianapolis, Indiana.

Novahistine® Singlet decongestant-analgesic

(Each tablet contains: phenylephrine hydrochloride, 40 mg.; chlorpheniramine maleate, 8 mg.; acetaminophen, 500 mg.)

So he'll breathe easier: relieve anxiety while you relieve pain.

Relief of pain is usually a major goal in traumatic conditions. But often of importance, too, is alleviation of anxiety and tension that may heighten patient discomfort.

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TABLETS

Equagesic®

(meprobamate and ethoheptazine citrate with aspirin) Wyeth®

IN BRIEF.

Contraindications: History of sensitivity or severe intolerance to aspirin, meprobamate or ethoheptazine citrate.

Warnings: USE IN PREGNANCY: Safety for use during pregnancy or lactation has not been established; therefore, it should be used in pregnant patients or women of child-bearing age only when the physician judges its use essential to the patient's welfare.

Precautions: Keep out of reach of children. Not recommended for patients 12 years old or less. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate in susceptible persons—as alcoholics, ex-addicts, severe psychoneurotics—has resulted in dependence or habituation. Withdraw gradually after prolonged excessive dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance, with resultant slowed reactions and impaired judgment and coordination. If drowsiness, ataxia or visual disturbances (impairment of accommodation and visual acuity) occur, reduce dose. If symptoms persist, patients should not operate machinery or drive. After meprobamate overdose, prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and hyperventilation are reported. Give cautiously and in small amounts to patients with suicidal tendencies. Treat attempted suicide (has resulted in coma, shock, vasomotor and respiratory collapse and anuria) with gastric lavage and appropriate symptomatic therapy (CNS stimulants and pressor amines as indicated). Two instances of accidental or intentional significant overdosage with ethoheptazine and aspirin have been reported. These were accompanied by CNS depression (drowsiness and lightheadedness) but resulted in uneventful recovery. On basis of pharmacologic data, CNS stimulation could be anticipated, with nausea, vomiting and salicylate intoxication (requires induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, and observation for hypoprothrombinemic hemorrhage [usually requires whole blood transfusions]).

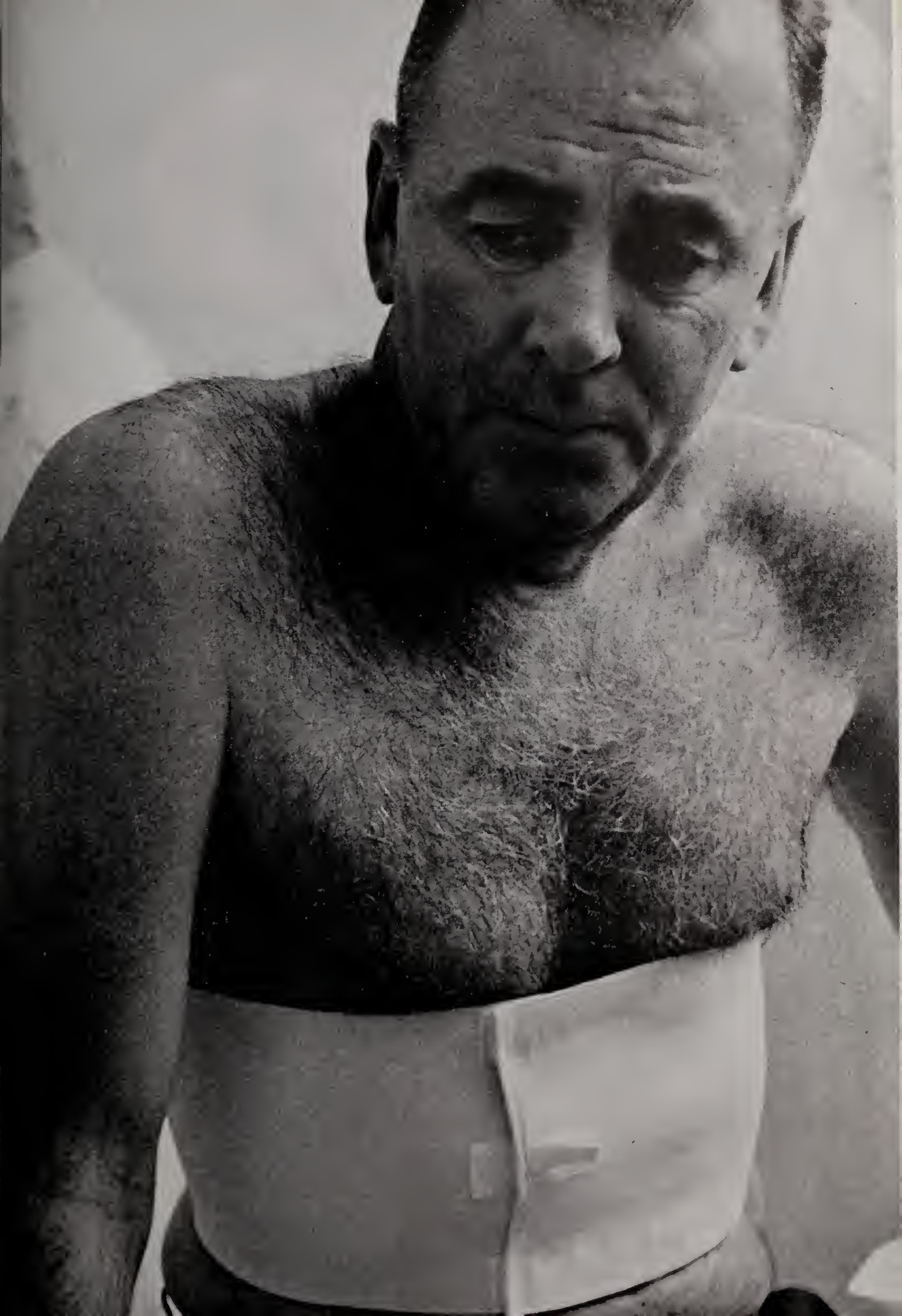
Adverse Reactions: Ethoheptazine and aspirin may cause nausea with or without vomiting and epigastric distress, in a small percentage of patients. Dizziness is rare at recommended dosage. Meprobamate may cause drowsiness, ataxia and rarely allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses. Such patients may have had no previous contact with meprobamate and may or may not have an allergic history. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. If allergic reaction occurs, discontinue meprobamate; do not reinstitute. Severe reactions, observed very rarely, include fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. These cases should be treated symptomatically including, when indicated, such medication as epinephrine, antihistamine and possibly hydrocortisone. A few cases of leukopenia, usually transient, have been reported on continuous use. Rarely, aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported, almost always in presence of known toxic agents.

Overdosage: See precautions section for management of overdosage.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories Philadelphia, Pa.

Photo professionally posed.



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DIA-QUEL
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DIA-QUEL actually tastes good

DIA-quel contains the only therapeutically active ingredient of paregoric—tincture of opium. This has been combined with homatropine methylbromide and pectin to make a sensible antidiarrheal formula.

By leaving out paregoric's outdated preservative—bitter-tasting camphor—we've produced an antidiarrheal that is good-tasting, as well as effective and prompt-acting in acute, nonspecific diarrheas and their accompanying "cramps." It is DIA-quel, a clear, red liquid with a pleasant cherry flavor.

Each teaspoonful (5 ml.) of DIA-quel Liquid contains:
Tincture of Opium... 0.03 ml.—Equivalent to 0.75 ml. of paregoric.
(Warning May be habit forming)
To reduce hypermotility and frequency.
Homatropine Methylbromide... 0.15 mg.
A safe dose for mild spasmolysis to curb cramping and griping.
Pectin... 24. mg.
Demulcent, adsorbent. Helps form stools.
Alcohol 10% by volume

ou're curious, back in the 1700's paregoric was d for diarrhea, but since the state of the pharma- rt was extremely primitive, fungus growth in cation was a problem. Bitter-tasting camphor d to prevent such growth and anise oil was an attempt to cover up the camphor taste. Liquid is a modern formulation that does not ither of these outdated ingredients.

With use of DIA-quel Liquid observe the usual ns associated with opium derivatives and anti- ics.

Usual adult dosage: 1 or 2 tablespoonfuls (15) t.i.d. or q.i.d. Usual children's dosage (Clark's to 2 teaspoonfuls (2.5 to 10 ml.) t.i.d. or q.i.d.

plied: In 4 fl. oz. (118 ml.) band-sealed bottles.

DIA-quel is a Federally exempt narcotic (Class X) preparation. Where state law permits, no prescription is necessary.

For a complimentary sample of DIA-quel, simply mail your request to us on a signed prescription blank.

DIA-QUEL LIQUID

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Symbols in a life of
psychic tension

B.A.
cum laude

V.P.
at thirty-two

ECG
and complete
examination normal
(persistent palpitations)

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LABORATORIES
Division of Hoffmann-La Roche Ir
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Rx

Valium® (diazepam) *t.i.d.* and *h.s.*

B.A. (*cum laude*)...V.P. (at thirty-two)...symbols that illuminate the quality of a life...the satisfactions of achievement, as well as its price...the pressures and stresses that can often create cardiac manifestations of psychic tension. For this kind of patient—with no demonstrable pathology—consider the singular benefits of Valium (diazepam).

With its pronounced calming action, Valium can relieve psychic tension promptly, attenuating its somatic signs and symptoms. Further, Valium is distinctly useful when somatic and depressive symptomatology (secondary to psychic tension) coexist. And Valium is generally well tolerated; in proper maintenance dosage, it seldom dulls the senses or interferes with functioning.

When psychic tension-related insomnia appears, an *h.s.* dose added to the *t.i.d.* schedule helps promote sleep.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms have occurred following abrupt discontinuance. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

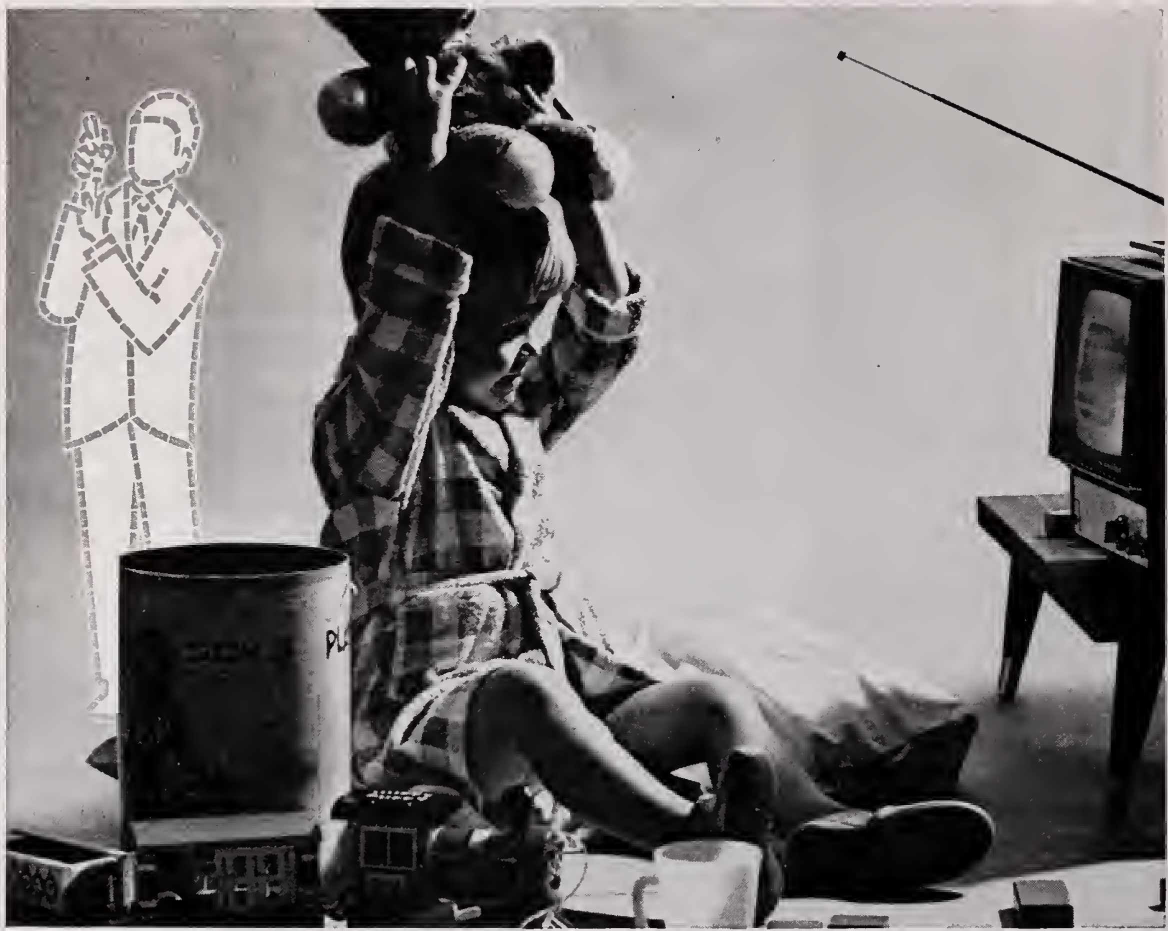
Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Valium® (diazepam)

2-mg, 5-mg, 10-mg tablets *t.i.d.* or *q.i.d.*

to help relieve psychic tension
and its somatic symptoms

It's almost as if you were there to give an injection of penicillin



V-Cillin K®, Pediatric dependable oral penicillin therapy

Potassium Phenoxymethyl Penicillin

Description: V-Cillin K, the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly), combines acid stability with immediate solubility and rapid absorption. Higher, more rapid serum levels are obtained than with equal oral doses of penicillin G.

Indications: Streptococcus, pneumococcus, and gonococcus infections; infections caused by sensitive strains of staphylococci; prophylaxis of streptococcus infections in patients with a history of rheumatic fever; and prevention of bacterial endocarditis after tonsillectomy and tooth extraction in patients with a history of rheumatic fever or congenital heart disease.

Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

How Supplied: Tablets V-Cillin K® (Potassium Phenoxymethyl Penicillin Tablets, U.S.P.), 125 mg. (200,000 units), 250 mg. (400,000 units), and 500 mg. (800,000 units).

V-Cillin K® (potassium phenoxymethyl penicillin, Lilly), Pediatric, for Oral Solution, 125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc. of solution (approximately one teaspoonful). [042567A]

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Additional information available to physicians upon request.

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MEDICAL ANNALS
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March 1969

VOLUME XXXVIII • NUMBER 3

Coronary Artery Ectasia in Chronic Cyanotic Congenital Heart Disease[*]

LOUIS P. KIRSCHNER, M.D.,[†] JOSEPH K. PERLOFF, M.D.,[‡] AND HOMER L. TWIGG, M.D.[§]

CORONARY ARTERY ECTASIA is a rare anomaly occurring in patients with chronic cyanotic congenital heart disease. The malformation has been commented upon only once before in the medical literature.[1] The present report concerns our observations in a 40-year-old cyanotic woman in whom the aorta arose entirely from the right ventricle while the pulmonary trunk arose from both ventricles. She not only represents the longest known survivor with this congenital malformation, but she also exhibited a degree of dilatation and tortuosity of the coronary arteries that has not been hitherto described.

Report of Case

The patient was first seen by us when she was 38 years old. She had been cyanotic since birth and had experienced effort dyspnea, fatigue, and orthopnea from childhood. Although these symptoms lessened in her teens she developed mild exertional chest pain beginning at the age of 20 years. Hemoptysis had occurred 3 times with 2 episodes which were sudden and severe. She was a small, thin woman with cyanosis and clubbing of the fingers but with much less cyanosis and little or no clubbing of the toes. The blood pressure was 92/65 mm Hg in both arms, and the arterial pulses were normal in the upper and lower extremities. Auscultatory signs included a normal first heart sound, a pulmonic ejection sound, a grade 3/6 midsystolic murmur, loudest in the second and third left interspaces, a prominent single second sound in the second left interspace, and a soft, inconstant mid-diastolic murmur at the cardiac apex.

The hematocrit was 60 per cent. Chest X-ray films showed that the lung fields were plethoric, especially the middle and inner thirds (figure 1). The pulmonary trunk was dilated. The atria were normal in size, and the right and left ventricles were only mildly enlarged. The electrocardiogram showed PR interval prolongation, right atrial enlargement, and combined ventricular hypertrophy.

Cardiac catheterization was performed from the right saphenous vein. The catheter entered the right atrium, right ventricle, and pulmonary artery in normal fashion. The descending aorta was readily entered by way of a patent ductus arteriosus. A retrograde femoral arterial catheter (figure 2) showed that the right ventricle communicated directly with the aorta which was in a relatively rightward and anterior position. The systolic pressures were identical in the right ventricle, pulmonary trunk, and aorta. The concentration of inhaled radioactive krypton was greater in the pulmonary trunk than in the brachial artery (index 178 per cent). The oxygen content of pulmonary arterial blood was 22.4 volumes per cent and of aortic root blood 19.7 volumes per cent. Indicator dilution curves with injection into the right atrium and right ventricle showed a systemic appearance time and a left-to-right shunt. Right ventricular angiocardiograms (figure 3) showed opacification of both great arteries. The aorta arose entirely from the right ventricle, and the pulmonary trunk arose from both ventricles. The aortic and pulmonary valves were in the same horizontal plane. The patent ductus was readily seen. Tortuous coronary arteries were indistinctly identified on the surface of the heart following the right ventricular angiocardiogram but were strikingly evident following injection of contrast material into the aortic root (figure 4). Both coronary arteries were aneurysmally dilated and tortuous. In addition, the lateral projection showed that the first portion of the aortic root rose vertically, and the plane of the aortic valve was horizontal.

The patient was lost to follow-up for 2 years. When she returned she was deeply cyanotic, dyspneic, and semistuporous. She died within 24 hours.

Necropsy examination can be summarized as follows. The aorta arose solely from the right ventricle, and the pulmonary trunk arose from both ventricles but principally from the left. The pulmonary trunk was conspicuously dilated and straddled a large ventricular septal defect that was situated just beneath the pulmonary valve. A large patent ductus arteriosus was present, and there was hypoplasia of the transverse aorta. The right and left coronary arteries and their branches were aneurysmally dilated and tortuous (figure 5). The right ventricular wall was greatly hypertrophied.

---

[*] This work was supported in part by the United States Public Health Service Career Award Program HE-14009.

[†] Department of Radiology, Commonwealth Doctors Hospital, 4215 Chain Bridge Road, Fairfax, Va. 22030.

[‡] Department of Medicine, Georgetown University Hospital, 3800 Reservoir Road, N.W., Washington, D. C. 20007.

[§] Department of Radiology, Georgetown University Hospital.

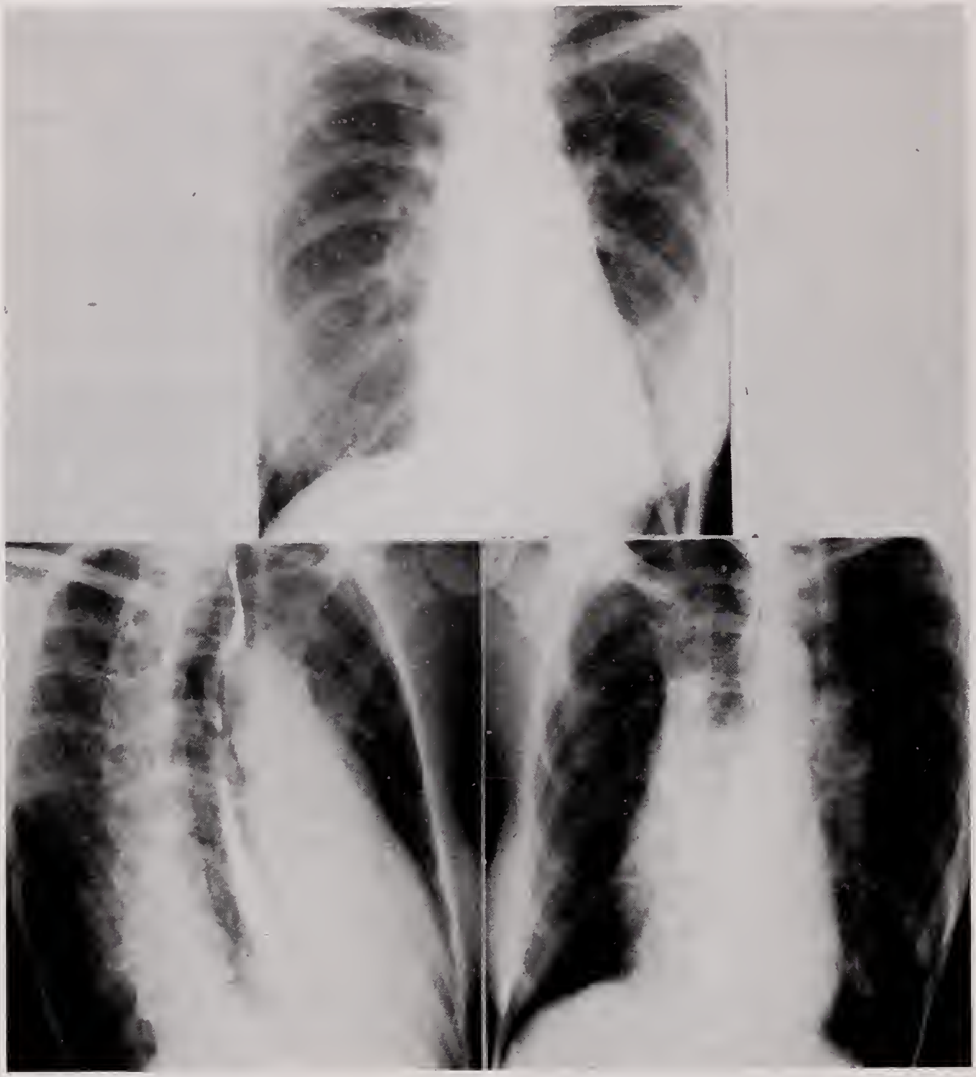

FIG. 1. Anteroposterior, right oblique, and left oblique X-ray films of the chest. Pulmonary blood flow is increased, especially in the middle and inner thirds of the lung fields (anteroposterior projection). The position of the great vessels appears normal. The pulmonary trunk is moderately enlarged. The cardiac dimensions are relatively unimpressive.

Discussion

The degree of coronary artery ectasia as demonstrated in our patient has not been observed before. In 1966 Björk[1] reported a "rare and previously undescribed anomaly consisting of marked dilatation and tortuosity of the coronary arteries . . . in 1 adult and 2 children with the tetralogy of Fallot." The malformation was called "ectasia of the coronary arteries." The findings in our patient appear to be extreme dilatation of the coronary arteries secondary to prolonged cyanotic congenital heart disease with gradual progression of the dilatation over a period of many years. Björk remarked that the ectasia may become more pronounced with increasing age.

The cause of these anatomic changes in the coronary arteries is not known, but the following line of reasoning is attractive. Nutritional requirements of cardiac muscle normally demand maximal extraction of oxygen from coronary arterial blood high in oxygen content. When the aortic root saturation is low, as it is in the presence of a right-to-left intracardiac shunt, maximal extraction may not provide the heart with ade-

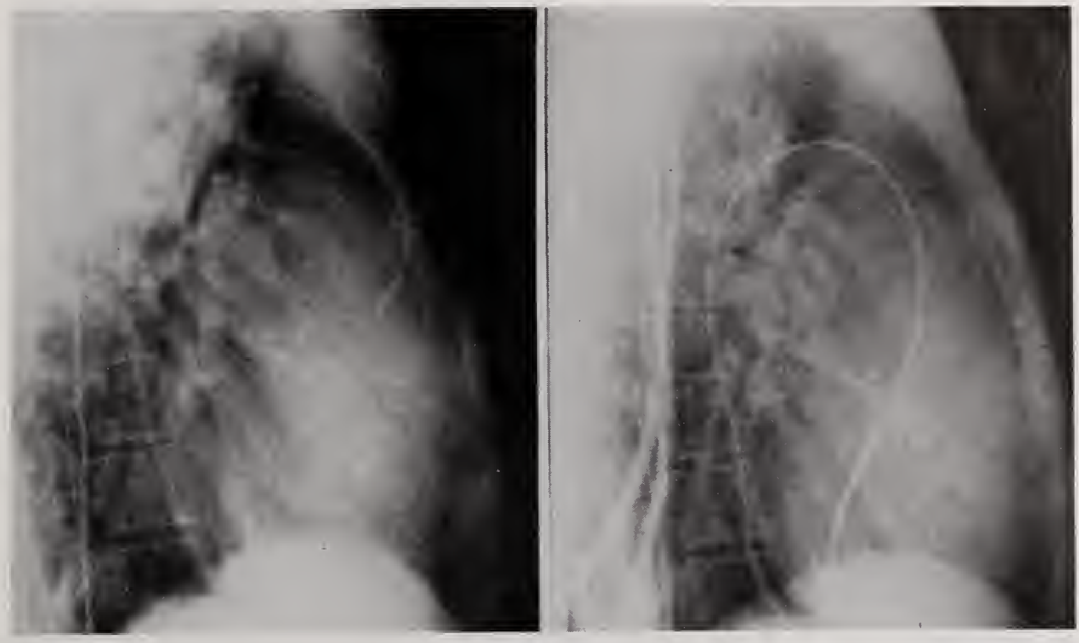

FIG. 2. Left: Retrograde femoral arterial catheter in the aortic root showing its relatively anterior position.

Right: Saphenous venous catheter traversing the right atrium, right ventricle, pulmonary trunk, patent ductus, and descending aorta. The position of the pulmonary trunk is relatively posterior when compared with the aortic-root position shown by the retrograde catheter.

quate oxygen. Under such circumstances the deficit may be overcome by increased flow through the coronary bed. A large flow acting over a long period of time may result in the dilatation and tortuosity of the coronary arteries found in some patients with cyanotic congenital heart disease of long duration.

The basic congenital cardiac malformation in our patient was right ventricular origin of the aorta and biventricular origin of the pulmonary trunk.[2] The malformation is a variety of the "Taussig-Bing" complex.[3, 4] The pulmonary hypertension had apparently been present from birth, since the configuration of elastic fibers in the pulmonary trunk was virtually identical to the configuration in the ascending aorta.[5] The oxygen contents and krypton 85 concentrations were higher in the pulmonary artery than in the ascending aorta, indicating that the left ventricle communicated directly with the pulmonary trunk which straddled the ventricular septal defect. Since the aorta arose wholly from the right ventricle, the position of its ascending portion differed from normal.[6] The aortic root was relatively rightward and anterior, the semilunar valves were at the same body level, the root rose rather vertically, and the plane of its valves was horizontal rather than oblique (figure 4).

Anomalies of the aortic arch are common with

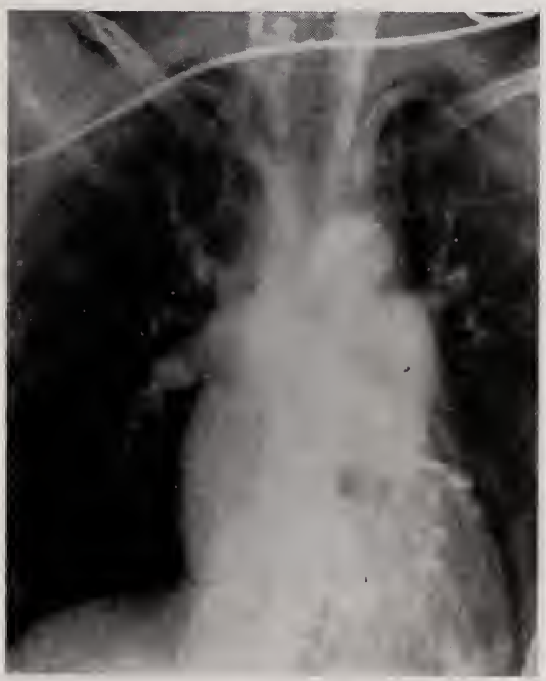

FIG. 3. Biplane angiocardiogram with injection of contrast material into the right ventricle (RV). The aorta is in a relatively rightward and anterior position originating entirely from the right ventricle. The enlarged pulmonary trunk is biventricular. The 2 semilunar valves are in the same horizontal plane. The patent ductus (DUCT) is identified. The coronary arteries are tortuous and dilated (figure 4).

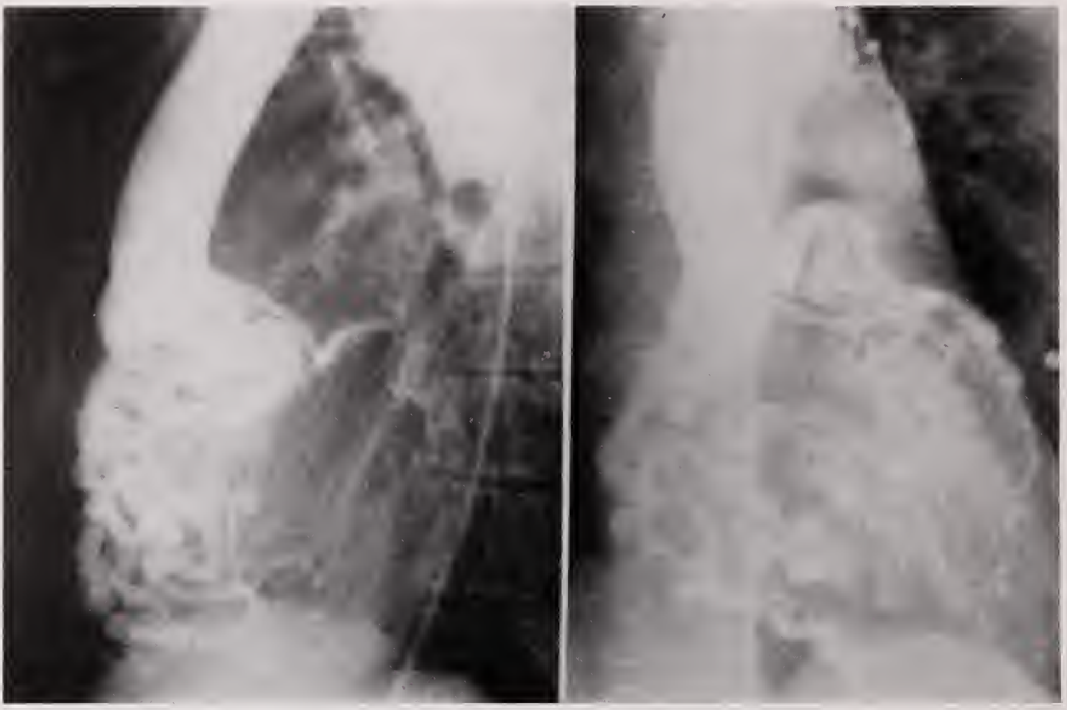

FIG. 4. Biplane angiocardiogram with injection into the aortic root. There is aneurysmal dilatation and tortuosity of both coronary arteries. In the lateral projection the first portion of aortic root rises vertically and the plane of its valve is horizontal.

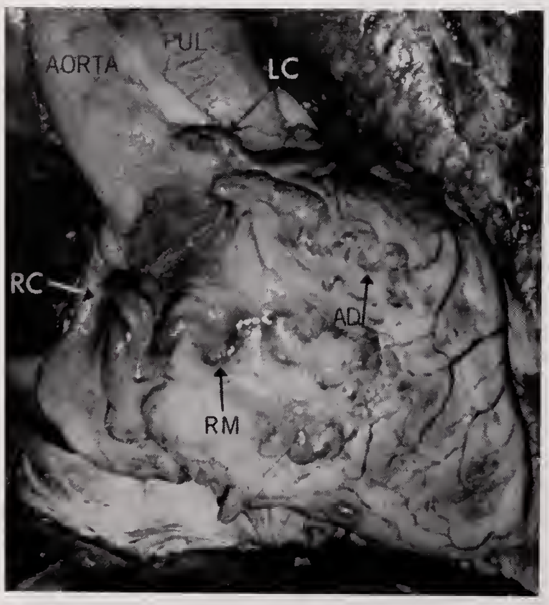

FIG. 5. The heart in situ showing striking dilatation and tortuosity of both coronary arteries.

PUL—pulmonary trunk

LC—left coronary artery; RC—right coronary artery

AD—anterior descending branch of left coronary artery

RM—marginal branch of right coronary artery

right ventricular aorta and biventricular pulmonary trunk.[2] Three such anomalies were identified in our patient, namely, hypoplasia of the transverse aorta, patent ductus arteriosus, and anomalous origin of the vertebral artery.

Differential cyanosis occurred because oxygenated blood from the left ventricle entered the pulmonary trunk and flowed via the patent ductus arteriosus into the descending aorta. The toes, therefore, were relatively acyanotic. Since unoxygenated blood from the right ventricle entered the ascending aorta the fingers were obviously cyanosed and clubbed.

The brisk bouts of hemoptysis appeared to be analogous to the hemoptysis occasionally seen with the pulmonary hypertension of Eisenmenger's complex.[7] Right ventricular aorta with biventricular pulmonary trunk differs radiologically from Eisenmenger's complex. In our patient cyanosis occurred with increased pulmonary blood flow (figure 1), but in Eisenmenger's complex cyanosis occurs with normal or diminished pulmonary blood flow.[8]

Summary

The case of a 40-year-old woman with right ventricular origin of the aorta and biventricular origin of the pulmonary trunk has been described. The patient lived longer than any previously reported subject with this congenital malformation. At angiography and at autopsy the coronary

(*Continued on page 142*)

Roentgen Findings in Acute Appendicitis

CHARLES J. TEGTMEYER, M.D.,* J. RICHARD THISTLETHWAITE, M.D.,†
AND THOMAS F. SNEED, M.D.‡

THE DIAGNOSIS of acute appendicitis is generally made on the basis of the history, physical examination, and laboratory findings. Thus, in most cases there is no indication for roentgen examination. On occasion the diagnosis of acute appendicitis can be difficult, and abdominal roentgenograms may contribute decisively to establishing the correct diagnosis.

Many roentgenographic findings have been described in acute appendicitis.[1–5] The purpose of this paper is to evaluate the relative incidence of roentgenographic signs in a consecutive series of 50 cases of proven acute appendicitis and to describe 3 new roentgenographic findings.

All 50 of the patients in this series had abdominal pain for at least 12 hours prior to admission, and 38 of them had pain for longer than 24 hours. There were 8 cases of early acute appendicitis, 23 cases of advanced suppurative appendicitis, and 19 cases of perforated appendicitis.

Evaluation of Roentgen Findings Previously Reported in Appendicitis

The appendicolith was the first preoperative roentgenographic sign indicating an abnormality of the appendix. It was described by Weisflog[6] in 1906.

The incidence of appendicoliths visualized on the abdominal flat plate in patients with acute appendicitis is approximately 10 per cent.[2, 7, 8] The incidence of fecaliths in acute appendicitis is approximately 30 per cent.[5, 7, 9, 10] Hence, only one-third of the fecaliths in acute appendicitis can be visualized by roentgen examination of the abdomen. The incidence of perforation of the appendix is increased in cases with appendicoliths.[11, 12] In this series appendicoliths were visualized roentgenographically in 5 cases, a 10 per cent incidence.

All appendicoliths are not visualized on the roentgenograms, because the amount of calcium in the stone dictates whether or not it will be seen. Many fecaliths do not contain enough calcium to be visualized on routine films of the abdomen, but examination of the removed appendix shows that nearly all fecaliths have the radiologic structure of stones. They are usually ovoid or elongated, measuring 1 to 2 cm. in their long axis. The stones frequently demonstrate a well laminated structure.[12] The calculi are commonly situated within the lumen of the appendix, but in some instances they lie free in the peritoneal cavity, having been extruded through the appendiceal wall. They are usually located within a 15 cm. radius of the midpoint of the right iliac crest. Multiple calculi are present in one-third of the cases.

An increased density in the right iliac fossa is usually demonstrated radiographically in patients with an appendiceal abscess. An abscess may also reside in the flank or true pelvis. The radiographic density is frequently well outlined, and the adjoining flank stripe is often effaced. Gas may be observed within the density. As a rule, only 1 small gas bubble is found, but in some cases a "foam-like" appearance is seen. When the cecum or adjacent loops of small bowel contain gas, an extra luminal impression may be made in these structures by an appendiceal abscess.

Air-fluid levels localized to cecum or terminal small bowel are signs of local edema and peritoneal irritation. This is a common finding in appendicitis.[10] The inflammation leads to collections of gas and retention of fluid in the surrounding ileal loops and the cecum. The resultant cecal fluid level is commonly short but at times extends to the hepatic flexure. These fluid levels are demonstrated consistently only on the left lateral decubitus view.

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* Resident, Department of Radiology, George Washington University Hospital, 901 23rd Street, N.W., Washington, D. C. 20037.

† Chief Medical Officer, George Washington University Division, District of Columbia General Hospital, Washington, D. C. 20003; Associate Clinical Professor of Surgery, George Washington University School of Medicine.

‡ Chief Radiologist, Yuma Hospital, Yuma, Arizona 85364; formerly Medical Officer, Department of Radiology, District of Columbia General Hospital, and Clinical Instructor in Radiology, Georgetown University School of Medicine.

The alteration of the right psoas outline consists of a slight lateral bulging of the muscle border in cases of early appendicitis. Later there is effacement of the distal third of its margin. This is caused by localized edema of the posterior abdominal wall and spasm of the psoas muscle. As a result of the spasm a concomitant, left convex scoliosis of the lumbar spine may be produced.

The flank stripe is the radiolucent line appearing in flanks immediately adjacent to the peritoneum. This line is produced by the radiolucency of the properitoneal fat layer. Alterations of this line in appendicitis consist either of broadening, shortening, haziness, or obliteration in the vicinity of the inflamed organ. These changes are appreciated best by comparing the contralateral stripes. This finding requires roentgenograms of excellent technical quality.

Extraluminal gas in the retroperitoneal space in the right lower quadrant may be seen in the presence of a ruptured retrocecal appendix.[13, 14] The gas is either intestinal in origin or more likely the end-product of extraluminal bacterial action. In some instances gas bubbles are observed along the flank or close to the lower margin of the liver.

Pneumoperitoneum is a rare occurrence in acute appendicitis. It is so infrequent that some authors doubt its existence. Frimann-Dahl[3] did not observe a single case in more than 2,000 cases of appendicitis. However infrequent, it does occur.[15-18] Pneumoperitoneum is detected beneath the diaphragm on the upright roentgenogram or over the liver on the lateral decubitus film. It is rarely seen on the flat plate. One case of pneumoperitoneum secondary to a ruptured appendix was observed in this series.

A roentgenographically demonstrable gas-filled appendix in the presence of acute appendicitis is a rare phenomenon. It was first described by Musgrove[19] in 1952. There have been 8 reported cases since then.[20] This sign is not pathognomonic but is highly suggestive and has been observed infrequently in normal individuals.[1, 21] One case was observed in the present series.

Acute appendicitis may be accompanied by varying degrees of small-bowel distention and gas. The adynamic ileus may be diffuse and lack localizing signs, or the ileus may be localized in the right lower quadrant. The latter is presumably the result of local inflammation in the right lower quadrant. Mechanical small-bowel obstruction may be demonstrated radiographically in some cases of perforated appendicitis.[22]

Evaluation of New Roentgen Signs in Acute Appendicitis

A combination of 3 new roentgenographic signs has been observed in this series of cases of acute appendicitis.

Sign 1 is the presence of an empty cecum. This is indicated by a cecum empty of detectable gas in the supine film. Gas, fluid, or organic contents must be present in other parts of the colon for the sign to be valid. The cecum must also occupy its customary anatomic position in the right lower quadrant (figure 1).

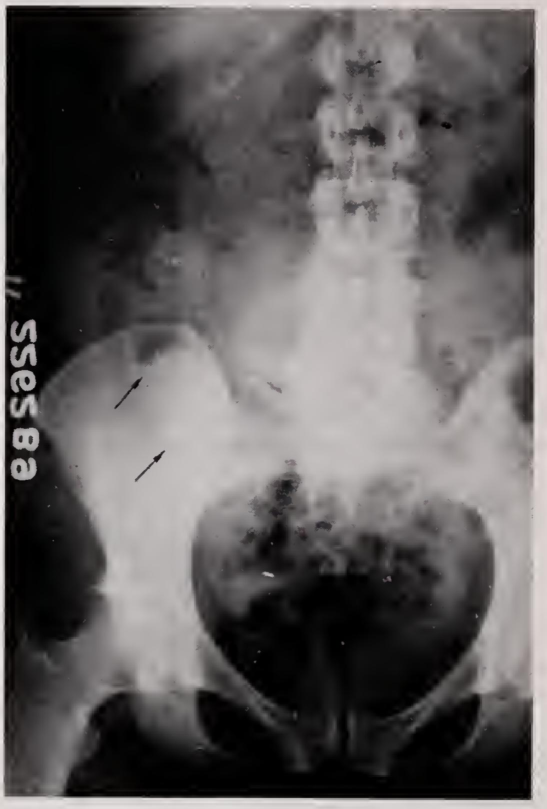

FIG. 1. Sign 1, the empty-cecum sign. The gas is distributed throughout the colon except for the cecum (upper arrow). Sign 2, the periappendiceal density sign. There is a density obscuring the right sacro-iliac joint as compared to the left sacro-iliac joint (lower arrow).

Sign 2 is the presence of a periappendiceal density. It is produced by an appendiceal abscess and is detectable as a soft-tissue density seen in the right iliac fossa. This is interpreted by comparing the relative clarity of the sacro-iliac joints. It is usually noted as a faint density in the right pelvic fossa (figure 2).

Sign 3 is a unilateral alteration of the right pelvic peritoneal (fat) stripe. The pelvic peritoneal

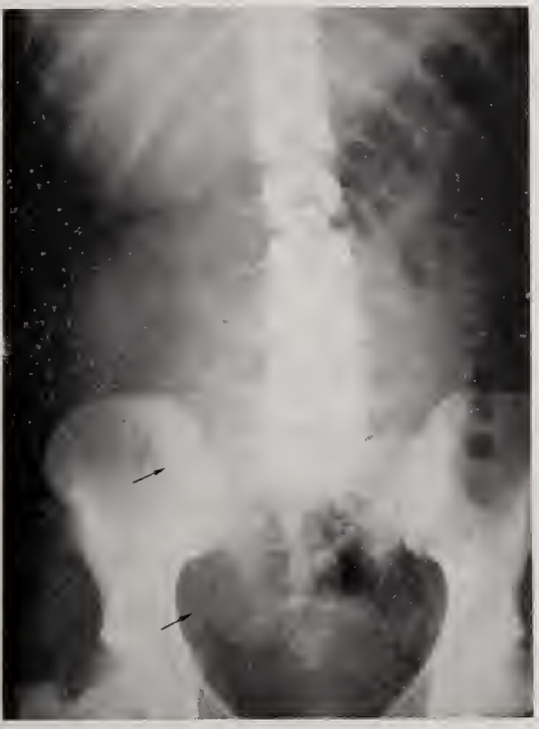

FIG. 2. Sign 2, the periappendiceal density sign (upper arrow). Sign 3, unilateral alteration of the right pelvic peritoneal stripe. There is haziness of the right pelvic peritoneal stripe as compared to the left pelvic peritoneal stripe (lower arrow).

stripe is a radiolucent crescent-shaped line appearing on the roentgenogram lateral to the pelvic peritoneum. Changes in the pelvic peritoneal stripe are best appreciated on a coned A-P view of the pelvis, but they can be detected on the abdominal flat plate. The alteration in the right stripe varies from haziness to complete ablation of the stripe. It should always be compared to the left pelvic peritoneal stripe (figure 2).

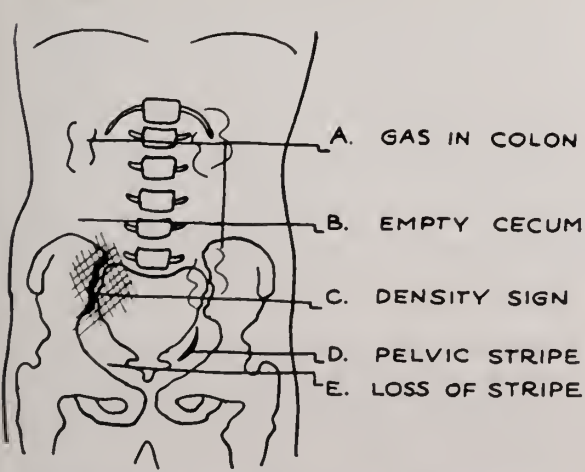

FIG. 3. Diagram of new roentgen pattern in acute appendicitis.

This entire picture depends upon the presence of Sign 1 for specificity. An empty cecum must accompany Sign 2 or Signs 2 and 3 for a roentgen diagnosis of acute appendicitis to be made on the basis of these signs alone (figure 3).

Discussion

In this series of 50 consecutive cases of proven acute appendicitis the described roentgenographic signs were encountered in 12 cases, an incidence of 24 per cent (table 1).

TABLE 1: Incidence of Old Roentgenographic Signs in 50 Cases of Acute Appendicitis

Roentgenographic Signs	No.	Percentage
1. Appendicolith	5	10
2. Abscess RLQ	3	6
3. Retroperitoneal gas	1	2
4. Gas-filled appendix	1	2
5. Pneumoperitoneum	1	2
6. Deformity of cecum	1	2
TOTALS	12	24

The new roentgen signs described were observed in 25 per cent of the cases of early appendicitis, in 87 per cent of the cases of advanced suppurative appendicitis, and in 84 per cent of the cases of ruptured appendicitis (table 2). It is apparent that these findings are seen in the more advanced stages of acute appendicitis and are not to be relied upon for diagnosis in cases of early acute appendicitis.

TABLE 2: Incidence of New Roentgenographic Signs in 50 Consecutive Cases of Acute Appendicitis

Pathologic Diagnosis	No. Cases	New Signs	Percentage
Early appendicitis	8	2	25
Suppurative appendicitis	23	20	87
Ruptured appendicitis	19	16	84
TOTALS	50	38	Avg. 65

The roentgen changes in acute appendicitis depend upon the various anatomic positions of the appendix and the extent of the inflammatory process. The latter is of primary importance. It is postulated that the new roentgen findings described result from a progression of the inflammatory process in acute appendicitis. The empty-cecum sign is produced by spasm of the cecum resulting from local irritation. The periappendiceal density is caused by the response of the peritoneal cavity to the insult. The omentum and loops of bowel attempt to localize the inflammation and wall off the area. This process traps peritoneal exudate in the area. This results in the soft-tissue density seen on the roentgenograms. The alteration of the pelvic peritoneal stripe is caused by extension of the process to the right pelvic gutter. The resultant inflammation and edema cause loss of the translucent fat-stripe in the pelvis.

Inflammatory conditions other than acute appendicitis may demonstrate 1 or more of the new signs on the roentgenographic examination. For example, bilateral alteration of the pelvic peritoneal stripes was seen in cases of acute salpingitis. Two cases of infarction of the terminal ileum were observed, demonstrating the empty-cecum sign and the periappendiceal density sign.

To evaluate the roentgenographic examination of the abdomen in acute abdominal conditions, the roentgen findings must be correlated with the clinical data. In the acute abdomen the appendix is known as the great masquerader, and any adjunct to an accurate diagnosis is appreciated by the clinician. Abdominal roentgenograms were found to be a valuable adjunct in the present series.

Summary

Abdominal roentgenograms were studied in a consecutive series of 50 cases of acute appendicitis. The previously reported roentgenographic findings of acute appendicitis were observed in 12 patients, an approximate incidence of 25 per cent.

Three new roentgenographic signs of acute appendicitis have been described. These are an empty cecum, a periappendiceal density, and a unilateral alteration of the right pelvic peritoneal stripe. These signs were present in approximately 85 per cent of the cases of advanced suppurative appendicitis or perforated appendicitis but were seen infrequently in cases of early appendicitis. Occasionally other intraperitoneal inflammatory conditions can exhibit the 3 new roentgenographic signs described, indicating that the roentgenographic interpretations must be correlated with the clinical picture for proper diagnosis.

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A New Method of Percutaneous Chordotomy for Relief of Intractable Pain*

JOHN L. FOX, M.D.†

The percutaneous chordotomy for relief of intractable pain is now a standard procedure carried out by neurosurgeons trained in the technique. Because mortality is presently extremely low compared to the 10 per cent mortality of open surgical chordotomy in cancer patients,[1] elimination of pain-conducting pathways in the spinal cord by percutaneous spinothalamic tractotomy has become an ideal method for relief of pain in cancer patients and in certain other patients with other causes of pain.

Due to unfortunate earlier experiences (respiratory paralysis) with the bilateral high cervical percutaneous chordotomy by the lateral approach at the C-1, C-2 interspace,[2–5] an approach through the cervical intervertebral disc below the phrenic nerve center was developed.[6, 7] The following presentation describes a unique method of rapidly and accurately directing the guide-needle and its contained electrode toward the spinothalamic target prior to passage of the guide-needle through the lower cervical intervertebral disc. Once this alignment is achieved, the needle can be passed through the disc and the electrode inserted into the spinothalamic tract of the spinal cord contralateral to the side of the pain.

Method

The main problem of concern is the method of directing the guide-needle toward the target by tilting it to the calculated angle from a vertical position in the polar plane, this plane being perpendicular to the long axis of the spinal cord. The patient lies in the supine position. The needle is inserted into the anterior part of the neck locally anesthetized on the side ipsilateral to the pain and directed to the anterior edge of the disc while aimed toward the contralateral side of the spinal cord. In other words, the needle now lies in the soft tissues of the neck in position to cross the disc from the ipsilateral toward the contralateral side. Since the angle of tilt of the needle to the left or right has to be set prior to insertion through the immobilizing disc, some method of keeping the needle on its exact trajectory prior to, and during insertion through the disc must be utilized.

Calculation of the angle of insertion is done easily and has already been described.[7, 8] Referring to figure 1 (left), the distance from the target to the needle tip on the A-P X-ray film divided by the distance from the target to the needle tip on the lateral X-ray film gives the tangent of the angle off vertical to which the needle must be tilted. The target coördinates for the spinothalamic tract and details of mathematical correction of the angle for distortion factors are given elsewhere.[7, 8]

Let us say, for example, that the angle calculated for the case in figure 1 happens to be a 20° tilt of the guide-needle to the right so as to aim the needle tip toward the left spinothalamic tract. We have devised a unique television (TV) camera‡ which effects transfer of the angle of needle correction to the needle itself. This camera originally was made for biplane intracranial stereotaxic surgery and is detailed in another article.[9] Essentially, it contains a miniature projector which projects the secondary image of parallel grid lines into the vidicon tube. These gridlines are on a reticule that can be rotated to the nearest 0.1 degree. The TV camera is placed on a tripod at the foot of the X-ray table and surveys the guide-needle in the patient's neck. Thus, the surgeon, while tilting the guide-needle, can observe the polar view of the guide-needle in the patient's neck (figure 2, upper left) and the superimposed grid lines on the conveniently placed TV monitor screen (figure 2, upper right).

After calculating the angle at 20° in this example, the surgeon turns the reticule on the TV camera

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† Chief of Neurosurgery, Veterans Administration Hospital, 50 Irving Street, N.W., Washington, D. C. 20422; Assistant Clinical Professor of Neurological Surgery, George Washington University School of Medicine.

‡ Constructed by Mr. Robert C. Green, engineer, Bethesda, Md. 20014.

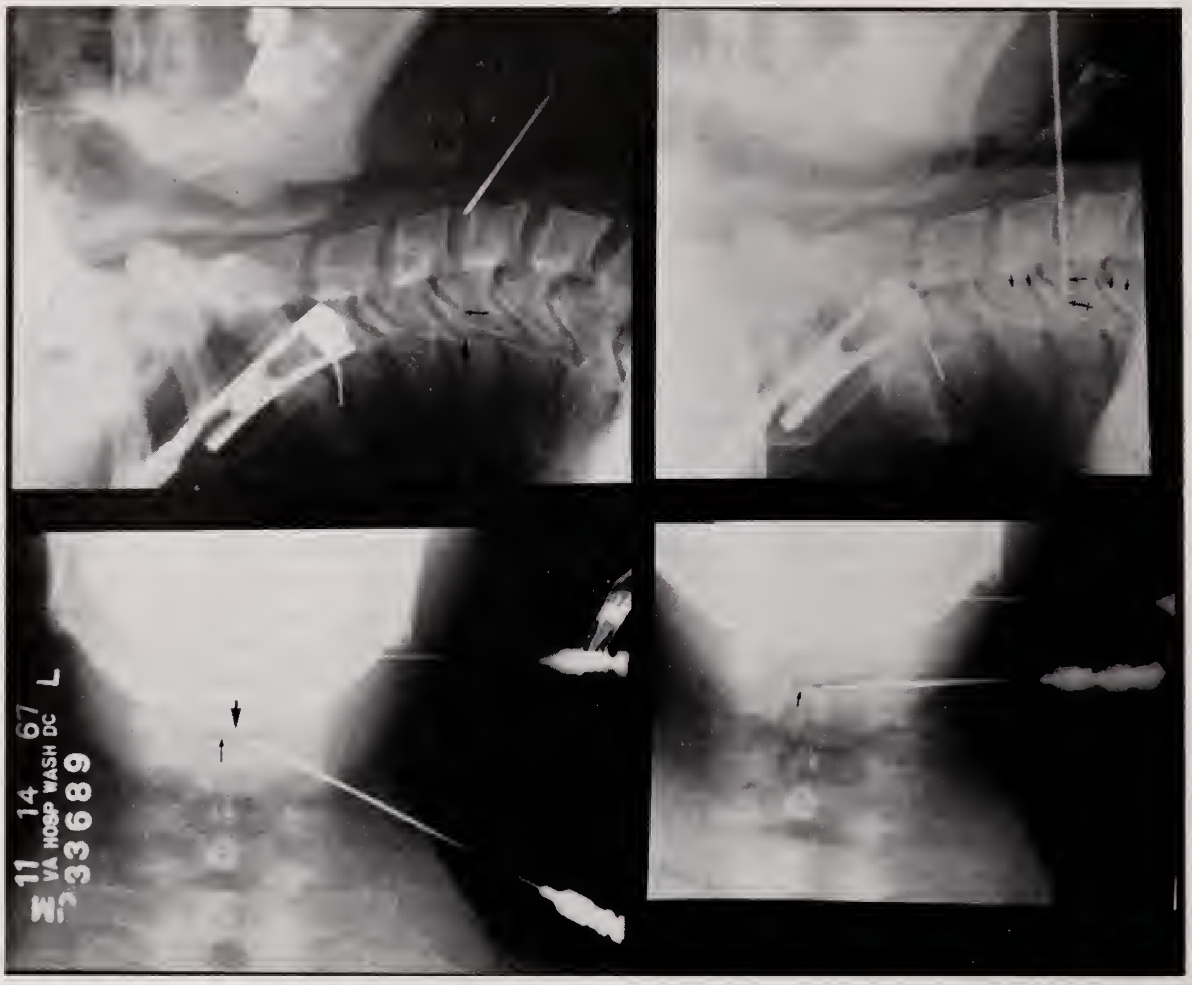

FIG. 1. Lateral and anteroposterior X-ray photographs of cervical spine.

Left: Guide-needle positioned at anterior edge of C-4, C-5 disc where needle tip acts as fulcrum of needle rotation in polar plane. Upper needle is ground lead in muscle tissue. Small arrow indicates target coordinate. Large arrow indicates posterior edge of spinal canal in lateral view and midline in A-P view.

Right: Tip of guide-needle in subarachnoid space. Electrode tip (crossed arrow on lateral view, single arrow on A-P view) in spinothalamic tract of spinal cord.

20° from its zero degree vertical baseline position. The image of these grid lines then turns 20° on the TV monitor (figure 2, lower left). The surgeon then tilts the guide-needle until its televised image is exactly parallel with the grid lines (figure 2, lower right). Now the needle is on its correct trajectory and is maintained in this direction as the needle is pushed through the disc into the subarachnoid space.

The electrode (figure 3) then is passed through the guide-needle and into the spinal cord. Recording the increase in electrical resistance or impedance as the electrode passes from spinal fluid into the spinal cord as well as patient response to electrical stimulation serves to confirm accurate target interception. This is verified radiographically (figure 1, right). Finally, radio frequency current (500,000 c.p.s.) at 50 to 100 ma. for 10 to 60 seconds is passed through the active electrode with the guide-needle as the indifferent electrode. If more than 100 ma. of current is needed, the electrode is next to, but not entirely inside the spinal cord.

Results

To date a total of 75 percutaneous chordotomies in 50 patients have been carried out either by the lateral C-1, C-2 approach or the lower anterior cervical transdiscal approach. These include repeat chordotomies and bilateral chordotomies for pain in the same patient. The results now are good and have improved since earlier problems were described.[2, 3]

In particular, 15 procedures have been performed on 13 patients by the new televised guidance technique described here. Three of these obtained no analgesia due to a belatedly discovered minute break in electrode insulation when we were coating our electrodes with Epoxylite® rather than covering with vinyl tubing. One patient died the next day because of acute intestinal obstruction related to his metastatic testicular carcinoma. Otherwise there were no deaths. Transient weakness on the side of the chordotomy commonly occurs and lasts a few days. Bladder dysfunction, often temporary, and impotence may occur in cases of bilateral chordotomy. The method described here has increased the accuracy and rapidity of the procedure and allows the electrode to come within a millimeter of the radiologic target.

Discussion

In 1963 Mullan et al[10] first reported on the percutaneous chorodotomy. This procedure to relieve intractable pain finally has gained widespread medical acceptance in this country after various modifications in technique and selection of patients to avoid earlier complications. Unlike the open surgical chordotomy in poor-risk cancer patients, death and serious morbidity resulting from percutaneous chordotomy now are very uncommon. Certainly the most common etiology of pain for which this procedure is used is cancer. Some cases with nonmaligant causes of intractable pain also are being selected for this procedure which relieves the sensation of pain and tempera-

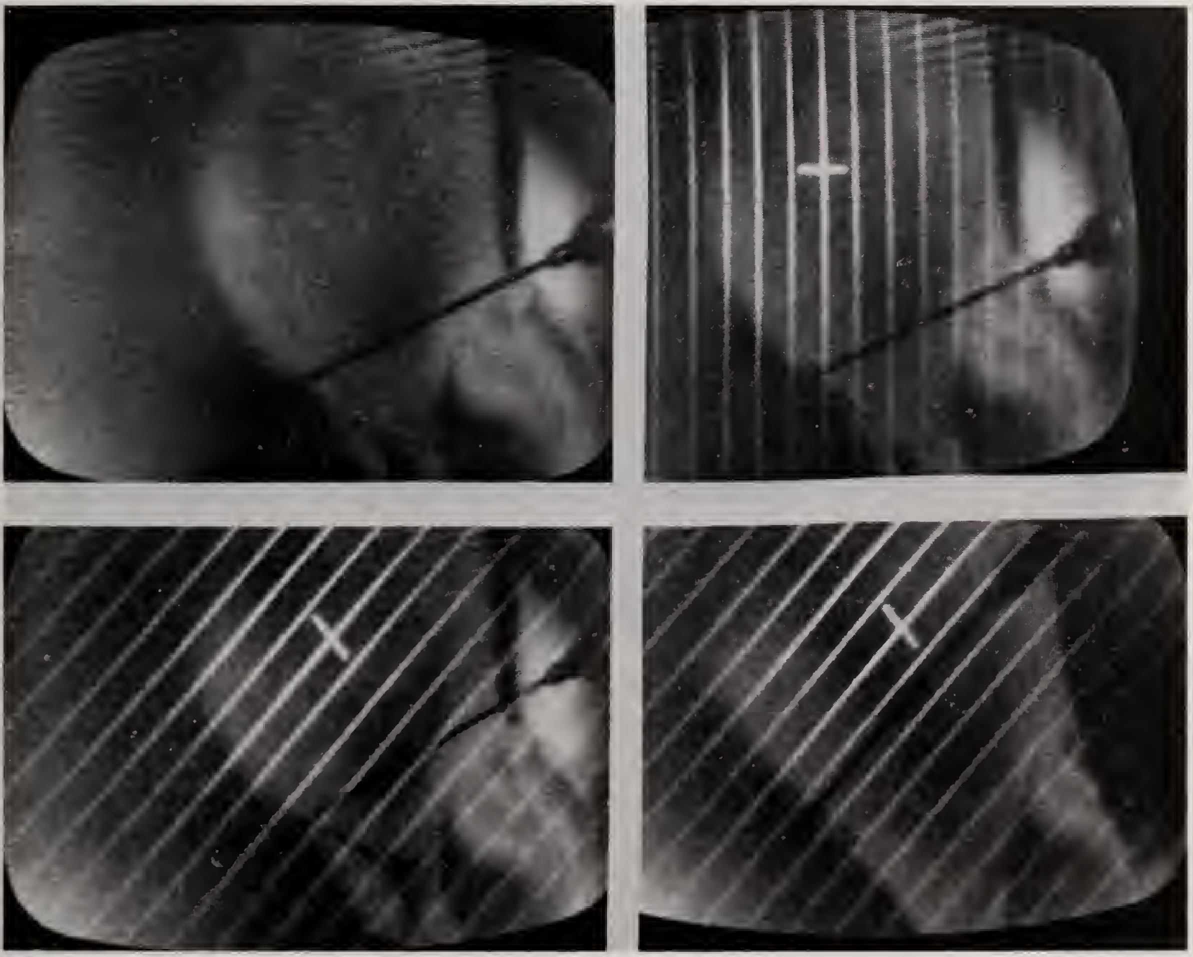

FIG. 2. Photograph of TV monitor screen showing close-up view of guide-needle in neck of patient. TV camera is looking at supine patient's neck from foot of X-ray table.

Upper-left: Same needle in polar view shown radiographically in A-P and lateral view in figure 1 on left.

Upper right: Grid lines turned on in baseline vertical position.

Lower left: Grid lines turned to angle calculated as described in text.

Lower right: Needle tilted to lie exactly parallel with grid lines. Needle is now aimed at its spinothalamic target.

ture change but preserves movement, touch, and propioception. The procedure, which easily can be repeated on the same or opposite side if necessary, is carried out in the awake patient under local anesthesia in the X-ray department. It generally requires less than a week of hospitalization. If performed before the patient becomes psychologically disabled or addicted to narcotics, optimum results are obtained.

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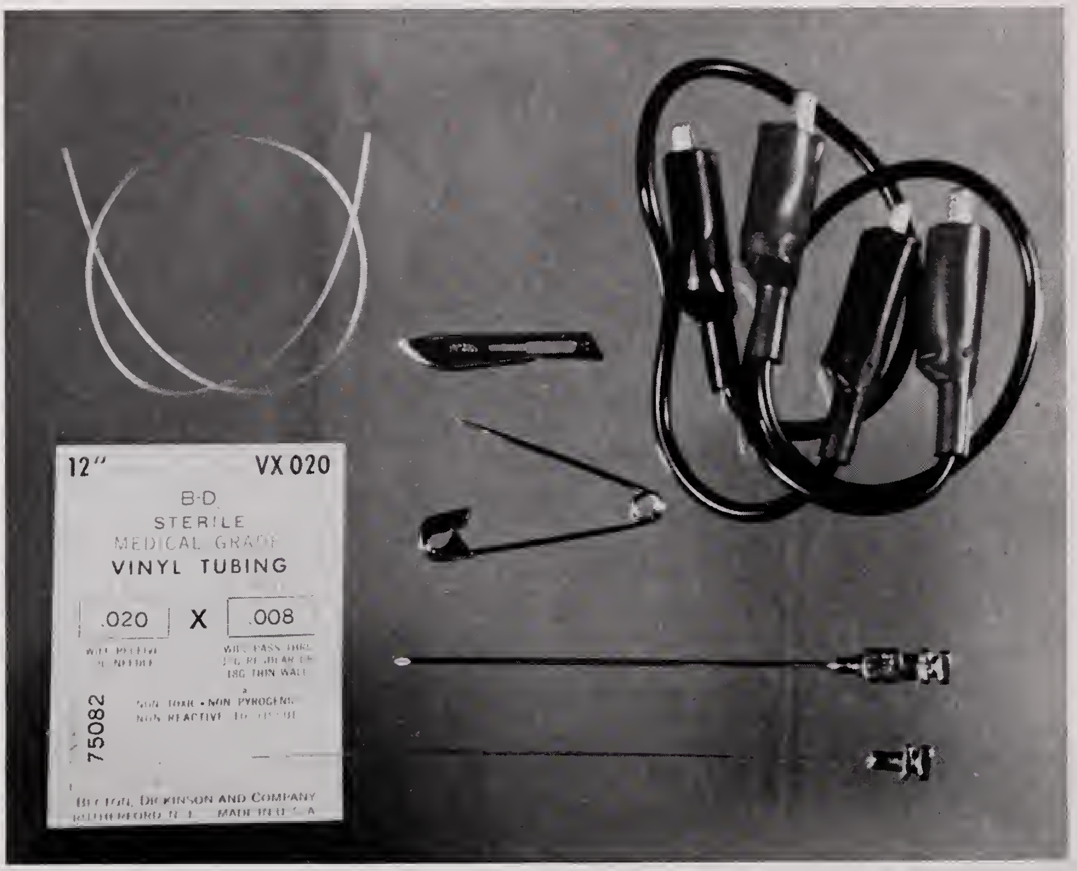

FIG. 3. Percutaneous chordotomy set. Below is the electrode: the stylet of a $4\frac{1}{2}$-inch, 22-gauge spinal needle insulated, except for its terminal 3 mm., with vinyl tubing shown on left. Above electrode is guide-needle: a $3\frac{1}{2}$-inch, 18-gauge, thin-wall, spinal needle. Included are wire leads, a knife blade to cut the tubing, and a safety pin to test pinprick sensation on patient.

Use of the TV guidance system as described here places the percutaneous chordotomy in the realm of stereotaxic surgery. This represents an advance in the anterior approach previously described.[6, 7, 8]

Summary

A new technique of percutaneous chordotomy to relieve intractable pain has been described. This method is carried out under local anesthesia and utilizes a unique television monitoring system to guide the electrode to its target in the spinothalamic tract of the lower cervical spinal cord.

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Brain-scanning in the Diagnosis of Metastatic Brain Tumors

WILLIAM W. STANBRO, M.D.,* AND CORNELIUS F. MURPHY, M.D.†

A PREVIOUS REPORT[1] compared the results of brain-scanning with technetium-99M pertechnetate and mercury-197 chlormerodrin in 60 patients. An additional 95 patients have been included in the study, and the 155 patients scanned with both isotopes furnish the material for this report.

Methods

All scans were performed with a Picker Magnascanner having a 5- by 2-inch sodium iodide crystal with a 55-hole low-energy collimator.

The dose of ^{99m}Tc used for brain-scanning in this study was 5 millicuries. This amount of activity injected intravenously resulted in a maximum of 40,000 to 60,000 counts per minute. Scanning was begun 15 minutes after injection with a scanning speed of 80 to 90 cm. per minute.

The dose of ^{197}Hg was 15 microcuries per Kg. not exceeding a total dose of 1 millicurie. This amount of activity injected intravenously resulted in a maximum of 2,000 to 4,000 counts per minute. Scanning was begun 4 hours after injection with a scanning speed of 38 cm. per minute.

Results

Of 155 patients scanned with both ^{99m}Tc and ^{197}Hg there were 16 positive scans in patients suspected of harboring metastatic brain tumors. All 16 had a histologic diagnosis of malignant neoplasm. There were 7 bronchogenic carcinomas, 6 breast carcinomas, 2 malignant melanomas, and 1 adenocarcinoma found in the brain at surgery, the primary site being unknown. All 16 developed signs and symptoms of brain involvement during the course of their malignant disease. In 4, brain metastases were found at operation or autopsy. Special diagnostic studies, response to radiation therapy, and the clinical course of the disease made the diagnosis of brain metastases almost certain in the rest.

The ^{197}Hg scans were positive in all 16 patients. Both the ^{197}Hg and ^{99m}Tc scans were positive in 8 patients, although in one the Tc scan demonstrated the lesion so poorly that no conclusion could have been reached without the backing of the ^{197}Hg scan (figure 1, A and B).

In one patient with a positive ^{197}Hg scan and a negative ^{99m}Tc scan the interval between scans was too long to allow a comparison of the 2 isotopes. In the remaining 15 the interval between scans ranged from 1 to 10 days, with the majority ranging from 1 to 3 days.

Discarding the patient with the long interval between scans from the study and including the case demonstrated in figure 1 as a postive ^{197}Hg and a negative ^{99m}Tc, there were 8 out of the 15 patients scanned with both isotopes in whom only the ^{197}Hg scans were positive.

It is interesting to note that in the 4 patients whose metastatic brain tumors were proven by histologic section the same ratio was obtained, with 2 out of the 4 scanned with both isotopes being positive only in the ^{197}Hg scans.

Discussion

In going over the tumor cases scanned with both isotopes it is apparent that the difference in results is more marked with metastatic than with primary brain tumors. The explanation for the superiority of the ^{197}Hg scans in the metastatic group is not known, although it seems reasonable to think that it is associated with the tumor-brain concentration ratio.

It has been demonstrated that radioactive mercury in human brain tumors is deposited in or on the neoplastic cells.[2] Moreover, while both technetium-99M pertechnetate and mercury-197 chlormerodrin are rapidly cleared from the blood stream, the longer interval between injection and scanning in the case of the ^{197}Hg allows more time for blood clearance of this isotope. With ^{99m}Tc the procedure of setting up the patient for scanning was begun 15 minutes after injection. This time was chosen so as to allow the total scanning time to

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* Professor of Radiology, George Washington University School of Medicine, 1331 H Street, N.W., Washington, D. C. 20005.

† Associate Professor of Radiology, George Washington University School of Medicine.

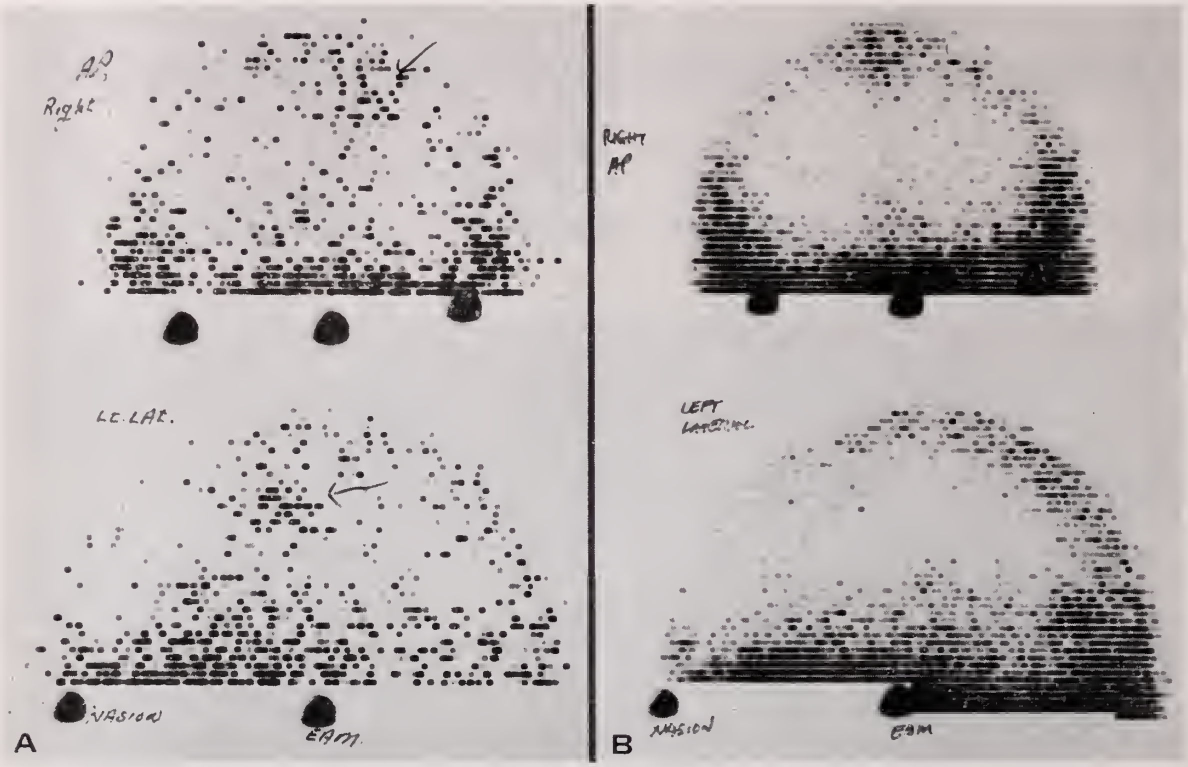

FIG. 1. A. The ^{197}Hg scan performed on March 14, 1967 clearly demonstrates a lesion in the posterior portion of the left frontal lobe in a patient with proven bronchogenic carcinoma and clinical evidence of cerebral metastatic disease.

B. The ^{99m}Tc scan performed on March 13, 1967 fails to definitely demonstrate a brain lesion.

bracket the time of the highest target-non-target activity ratio[3] and at the same time provide excellent counting statistics. Longer intervals between injection and scanning in our hands have not improved the performance of this isotope.

Summary

A total of 155 patients have been scanned with both technetium-99M pertechnetate and mercury-197 chlormerodrin. The difference in the results obtained was particularly marked in the group of 16 patients suspected of harboring metastatic brain tumors. In this group ^{197}Hg was superior to ^{99m}Tc in its ability to demonstrate brain metastases.

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Klebsiella Pseudomembranous Enterocolitis

Report of Two Cases

LT. COMMANDER M. M. MURDOCH, MC, USN,* COMMANDER N. A. JANOVSKI, MC, USNR,† AND
LT. COMMANDER S. JOSEPH, MSC, USN‡

MOST OF THE LITERATURE gives Finney[1] credit for the first description of pseudomembranous enterocolitis in 1893, but Bloomfield[2] mentions a previous description of the disease by Bilroth[3] in 1867. Pseudomembranous enterocolitis, often called staphylococcal enterocolitis, is a disease which has received increasing interest in the antibiotic era primarily because of the belief that injudicious use of antibiotics has caused its increased incidence.

Stickler[4] stated that a review of 107 cases at the Mayo Clinic demonstrated an equal incidence of the disease in the pre- and postantibiotic eras mitigating against this concept. Numerous etiologic factors have been proposed including intestinal obstruction, postoperative shock, impaired vascular supply, vascular thrombosis, vitamin deficiency, and drug toxicity. All of these theories have a common denominator—destruction of the normal intestinal flora with subsequent overgrowth of pathogenic organisms resulting in signs and symptoms of intestinal obstruction, diarrhea, electrolyte imbalance, bacteremia, shock, and frequently death. Mortality figures vary, with some authors reporting as high as 91 per cent.[5] Most cases in the literature are caused by coagulase-positive *Staphylococcus aureus.* In some classical cases, however, Proteus, Pseudomonas, enteropathic *E. coli,* and Klebsiella appear to be the etiologic agents. In a few cases no bacteria have been isolated.[5]

Recently at the National Naval Medical Center 2 cases of pseudomembranous enterocolitis have come to autopsy in which there were strikingly similar clinical symptoms and pathologic anatomic findings. Stool cultures in both infants showed a predominant overgrowth of Klebsiella, an organism not usually etiologically associated with pseudomembranous enterocolitis. It is for this reason that these cases are presented.

Report of Cases

Case 1. The patient was a 1-month-old Caucasian male infant who was the product of a full-term, uncomplicated pregnancy, labor, and delivery, with a birth weight of 8 pounds, 7 ounces. In the immediate neonatal period the infant experienced 24 hours of temporary intestinal obstruction which cleared up spontaneously without further complications, and he was discharged home in his mother's care. The child thrived poorly and developed episodes of gaseous distention and diarrhea with symptoms of intermittent abdominal obstruction. His diet was changed from Similac® to Nutramigen® with only slight improvement. He continued having intermittent symptoms with increasing abdominal distention and small, frequent, greenish stools. He was readmitted at 2 weeks of age, weighing 7 pounds, 3¾ ounces. While being afebrile, he was, however, moderately cachectic and dehydrated. His abdomen was distended, with high-pitched gurgling bowel sounds. Rectal examination was normal. Urine cultures on admission revealed 50 to 60 white blood cells per high-power field. Urine culture grew Klebsiella organisms, but treatment was withheld because the child was afebrile. The initial white blood cell count was 16,500 with 22 per cent neutrophils, 32 per cent band forms, 27 per cent lymphocytes, 5 per cent eosinophils, 9 per cent monocytes, 1 per cent metamyelocytes, and 4 per cent myelocytes. The serum electrolytes, hemoglobin and hematocrit were within normal limits. X-ray films were interpreted as being consistent with an adynamic ileus. Stool cultures initially revealed *Proteus rettgeri* and Pseudomonas. These were repeated 1 week later and were reported as being negative for pathogens. Specific stool cultures for *Staphylococcus aureus* coagulase-positive organisms were negative. Blood cultures were negative.

The baby was treated with intravenous fluid, Nutramigen and Viokase® because of an abnormally high stool-fat content. He showed little improvement, and on the eighteenth day following admission, his temperature, which had remained within normal range throughout his course, was found to be 94°F. A white blood count performed at that time was 61,000 with a marked left shift. Intravenous ampicillin and Coly-Mycin® therapy was instituted. The child suffered a cardiac arrest which was successfully resuscitated; however, the child's temperature remained below 95°F, with progressive shock and death within the next 24 hours despite intensive therapy. Antemortem blood cultures showed no growth.

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* Resident in Pathology, Department of Anatomic Pathology, United States Naval Medical School, National Naval Medical Center, Bethesda, Md. 20014.

† Professor of Pathology, Creighton University School of Medicine, Omaha, Nebr. 68108; formerly Chief of Anatomic Pathology, United States Naval Medical School. (Reprint requests to Dr. Janovski.)

‡ Staff Bacteriologist, Clinical Laboratory, United States Naval Medical School.

At autopsy 20 hours after death the primary findings of interest were restricted to the distal ileum and colon. The small intestine contained a minimal amount of fecal material and the mucosa appeared velvety pink and finely granular with characteristic transverse folds except for the terminal 10 cm. of ileum which was hyperemic, injected, and had coarse mucosal granularity and very fine mucosal petechial hemorrhages.

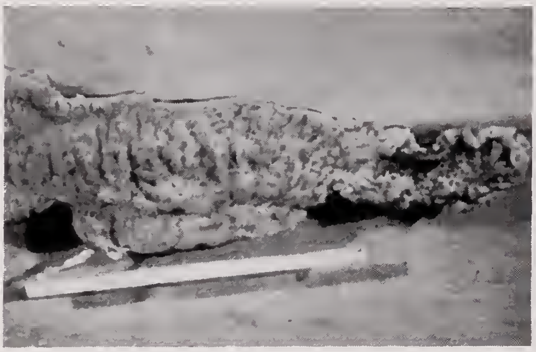

FIG. 1. Case 1. General view of colon.

The large intestine was greatly distended. The mucosa appeared cherry red, roughly granular, and was covered by a patchy, firmer, adherent, thick, grey-white, opaque membranous exudate (figures 1, 2, 3 and 4). There was no evidence of obstruction or perforation.

The abdominal cavity contained 95 c.c. of turbid straw-yellow exudate. Free floating fibrinous material was observed between the intestinal loops, and in places the colonic serosa was finely coated with fibrinous exudate indicating a peritonitis. An additional observation was the petechial hemorrhages which occurred in the gastric mucosa.

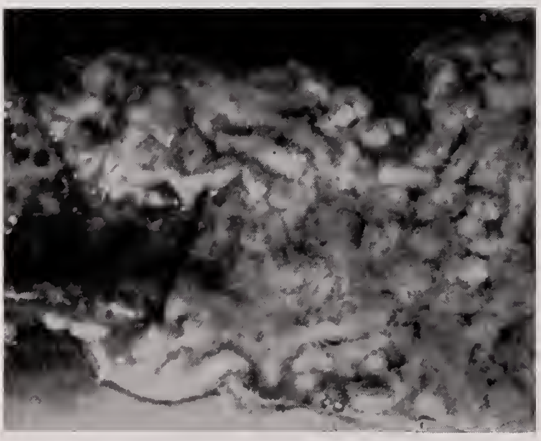

FIG. 2. Case 1. Pseudomembrane formed by firmly adherent opaque grayish white membranous exudate.

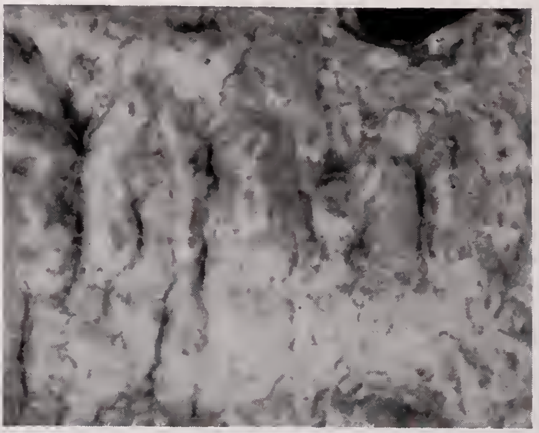

FIG. 3. Case 1. Close-up view of colonic pseudomembrane.

Microscopic examination revealed the colonic mucosa to be partially denuded or completely eroded and covered by the thick, fibrinous exudate (figure 5). The intestinal capillaries were markedly congested. There was pronounced submucosal edema. A predominantly acute inflammatory infiltrate extended through the entire thickness of the edematous colonic wall (figure 6). There was massive necrosis of the mucosal elements throughout (figure 7).

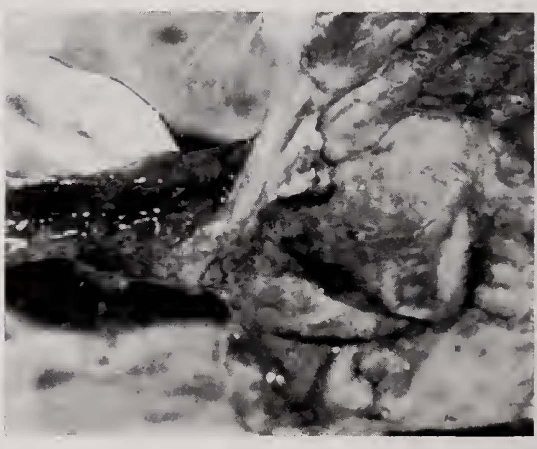

FIG. 4. Case 1. Involvement of ileocecal valve by pseudomembrane.

Postmortem cultures of blood and stool revealed pure Klebsiella organisms.

Case 2. The patient was a 3-month-old Caucasian male infant born prematurely at 35 weeks' gestation following an uncomplicated pregnancy. He weighed 4 pounds, 15 ounces at birth. He had no bowel movements during his first 2 days of life and was transferred to the National Naval Medical Center, at which time he spon-

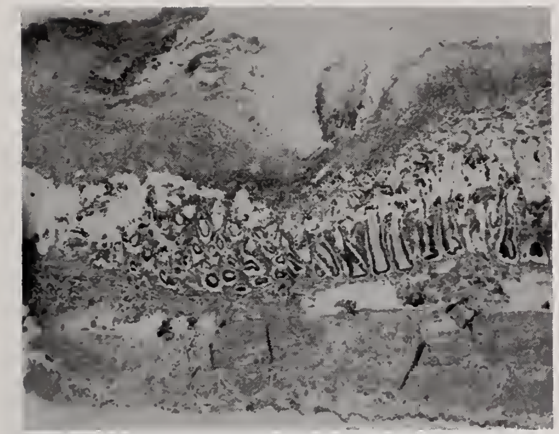

FIG. 5. Case 1. Partially eroded mucosa covered by thick fibrinous exudate.

taneously developed diarrhea lasting 10 days. This was treated only with intravenous fluids and electrolytes with subsequent improvement, and the baby was discharged. He did well until 2 months of age, at which time he again developed diarrhea which was treated with tetracycline with improvement. At the age of 3 months he was readmitted to the National Naval Medical Center because of a fever of 101°F and recurrent diarrhea. He was mildly dehydrated, afebrile, and tachypneic, had moderate abdominal distention, and weighed 9 pounds, 7¾ ounces. The white blood cell count was 16,400 with 16 per cent neutrophils, 12 per cent band forms, 59 per cent lymphocytes, 3 per cent monocytes, 9 per cent eosinophils, and 1 per cent basophils. The hemoglobin was 6.2 Gm. with a hematocrit of 19 per cent. The infant was markedly acidotic with a blood pH of 7.05 and a pCO^2 of 35. Stool cultures grew Klebsiella.

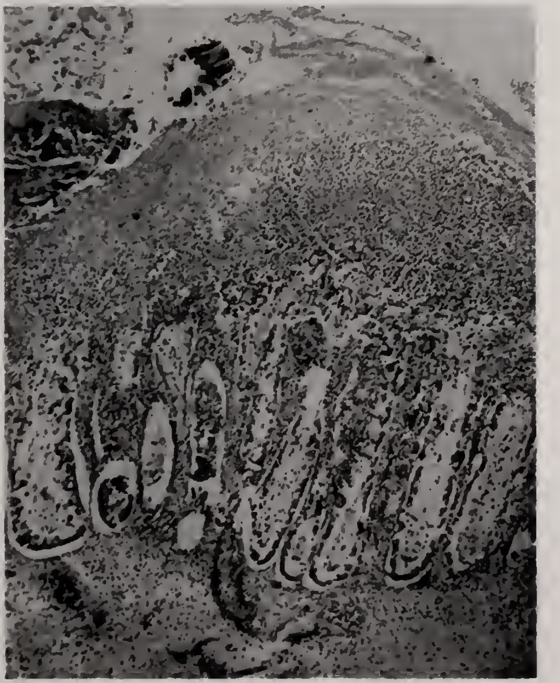

FIG. 6. Case 1. Inflammatory exudate extending through entire thickness of colonic wall.

Treatment with aqueous penicillin and kanamycin was instituted without improvement. The infant developed vomiting, increasing fever to 103° F, and the white blood cells rising to 93,000/cu. mm. Subsequent stool cultures revealed coagulase-positive *Staphylococcus aureus* in addition to Klebsiella, and the antibiotics were changed to chloramphenicol and Keflin®. Blood cultures were negative. In spite of antibiotics and electrolyte therapy, the patient's course was that of rapid deterioration. He suffered a cardiac arrest which was successfully resuscitated, but he subsequently suffered a second arrest and died 4 days following admission.

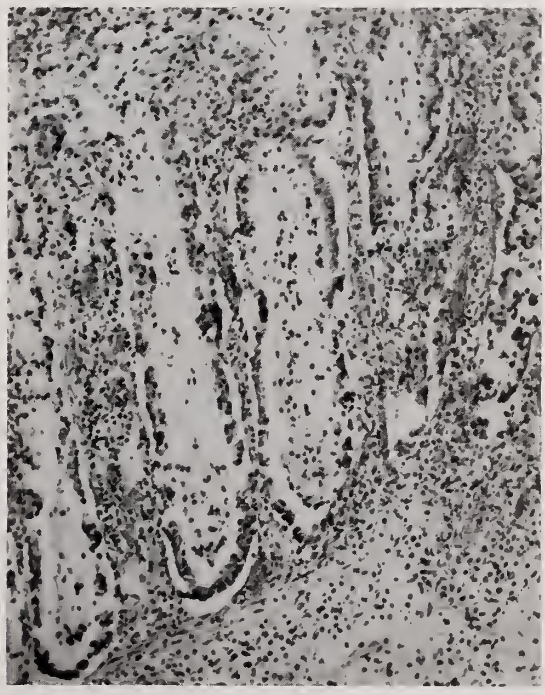

FIG. 7. Case 1. Epithelial tubular structure of intestinal mucosa undergoing massive necrosis.

At autopsy 6 hours after death the pertinent findings were within the colon. Upon opening the abdominal cavity 100 c.c. of turbid serofibrinous fluid was encountered. The serosal surface of the entire colon was coated with fine, whitish-yellow, fibrinous exudate. Both large and small intestine contained dark brown liquid fecal material. The large intestine was markedly distended with the mucosal surface covered by a grey-white, opaque membranous exudate. Where the exudate was absent from the intestinal surface, numerous small superficial ulcerations of the underlying mucosa were apparent (figures 8 and 9). There was no evidence of obstruction or perforation of the intestinal tract.

Microscopic examination of the large intestine showed a massive inflammatory exudate covering the partially eroded mucosal surface (figure 10). The remaining mucosa and submucosa were markedly congested, edematous, and massively infiltrated by an acute inflammatory infiltrate which extended to the serosal surface (figures 11 and 12). A less dense fibrinous exudate was seen to be adherent to the inflamed serosal surface.

Postmortem cultures of the stool contents revealed Klebsiella species and coagulase-positive *Staphylococcus aureus*. Blood cultures revealed no growth after prolonged incubation.

On the basis of histological examinations of the distal segments of the colon in both cases the possibility of Hirschsprung's disease (idiopathic megacolon) has been ruled out.

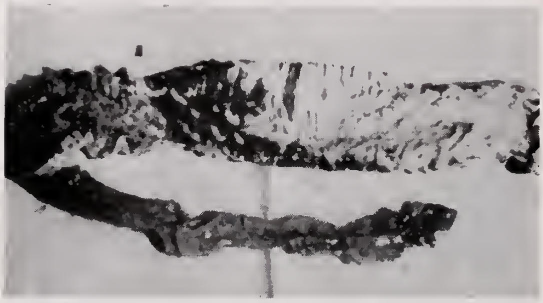

FIG. 8. Case 2. Marked distention of large intestine and hyperemia of small intestine.

Method of Identification of Organisms

All specimens were initially inoculated on trypticase soy agar with 5 per cent sheep blood added, mannitol salt agar, MacConkey agar and thioglycollate broth. Stool specimens were also inoculated on Salmonella-Shigella (S-S) agar. All isolates were identified by the criteria as outlined in "Bergey's Manual of Determinative Bacteriology."[6]

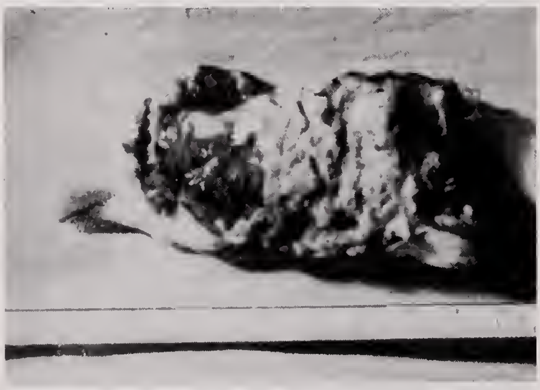

FIG. 9. Case 2. Pseudomembranous exudate in juxtaposition to extensive mucosal erosion.

Confirmation of identification of *Staphylococcus aureus* and Klebsiella cultures was accomplished through courtesy of the Bacterial Reference Unit of the Communicable Disease Center, Public Health Service, Atlanta, Georgia. The methods and media used for these determinations are those described in "Identification of Enteriobacteriaceae" by Edwards and Ewing.[7]

Discussion

Walcher[8] in 1946 described Klebsiella associated with epidemic enteritis in infants ranging from 4 to 10 weeks of age. A control group of 107 infants was also studied and demonstrated Klebsiella in the stools of 2. He also cited a previous such epidemic due to Klebsiella in 1932.

In 1961 Olarte et al[9] reported an outbreak of diarrhea among premature infants in Mexico City in which stool cultures revealed Klebsiella type 19 to predominate. None of the infants responded to antibiotic therapy, and 9 out of the 10 patients died. The authors found that upon feeding adult volunteers meals containing massive doses of Klebsiella type 19 none of the subjects became ill and only 2 were found to pass any of the Klebsiella type 19 in their stools. Only 1 of the volunteers developed any specific antibodies to the organisms. They concluded that Klebsiella would not produce diarrhea in adults even in massive doses. It was their belief that the etiologic agent in the outbreak was most probably a virus and that Klebsiella did not contribute to the disease but was merely a contaminant of the common flora.

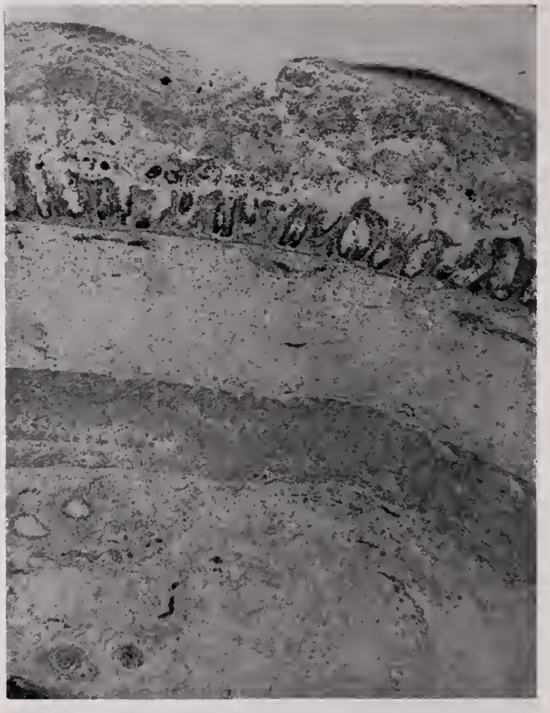

FIG. 10. Case 2. Areas of mucosal erosion covered by fibrinous exudate.

That Klebsiella may indeed become an enterocolitic pathogen was verified by Steinhouser et al[10] in 1966 through a study of 247 patients infected with the Klebsiella-Enterobacter-Serratia group. His study showed that the Klebsiella types varied in drug susceptibility, with most of the patients developing clinical symptoms while being treated with at least 1 antibiotic. He also found that the patients developed superimposed infections of Klebsiella type 2 and 24 while being treated with 2 or more antibiotics. In this study Klebsiella bacteremia carried a very high mortality rate, with the rate being somewhat less in patients with Klebsiella urinary-tract infections developing bacteremia. The overall mortality rate in patients developing Klebsiella bacteremia was 50 per cent.

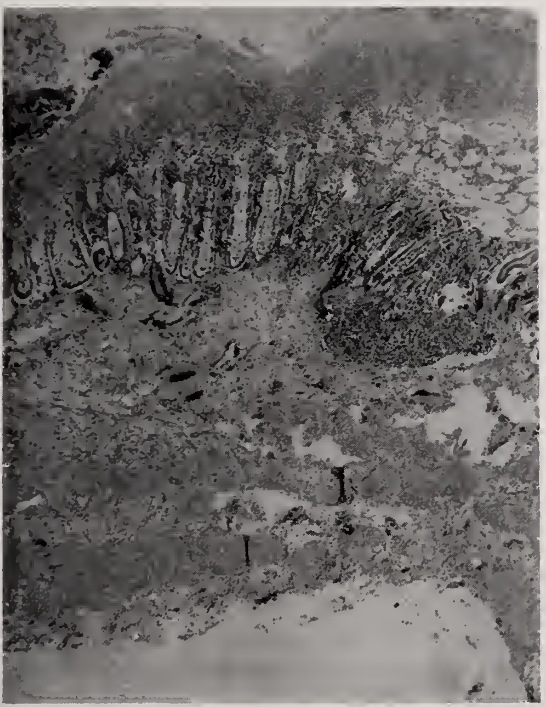

FIG. 11. Case 2. The pseudomembranous enterocolitis is associated with a serofibrinous peritonitis.

A more recent report by Karpas and Boman[11] reviews 7 cases of Klebsiella enteritis in patients ranging in age from 35 to 79 years of age. Two patients died with one of these developing the disease while receiving Achromycin®. Another patient developed the enterocolitis while receiving penicillin but recovered. They found that in stool cultures with Klebsiella predominating, a wide variety of associated organisms, including coagulase-positive *Staphylococcus aureus* and alpha hemolytic Streptococcus, was demonstrated. They were able to demonstrate no relationship between the severity of the disease and the serologic type of Klebsiella.

Klebsiella has also been reported grown in pure culture from stool specimens in a case of nonfatal ulcerative colitis in a 47-year-old Caucasian male receiving penicillin therapy.[12]

Weil et al[13] most recently described an outbreak of resistant bacteremic infections of Klebsiella type 25 in children ranging from 2 to 23 months of age. In most cases the children developed bacteremia while recovering from an unrelated illness for which they had been hospitalized. They became suddenly seriously ill with high fever and diarrhea.

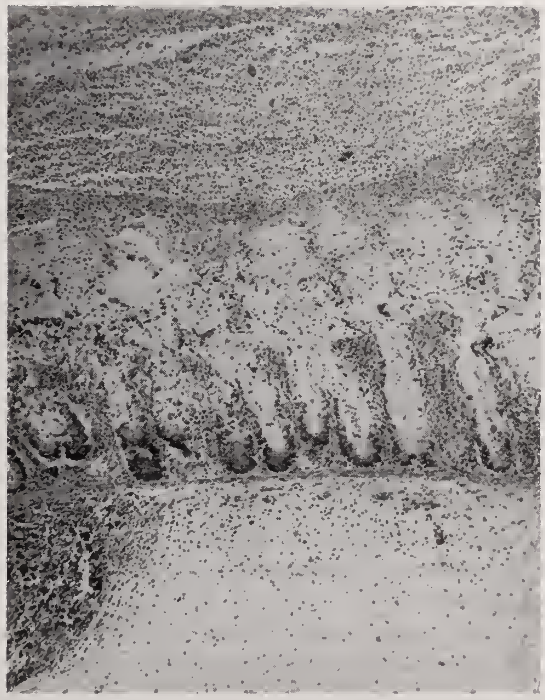

FIG. 12. Case 2. Profound destruction of mucosa associated with marked edema of colonic wall.

Abrams and Bishop[14] in their 1966 study on the effect of the microbial flora on the resistance of the small intestine to infection indicated that the size of the intraluminal population of potentially virulent microörganisms is the prime determinant of bacterial transmucosal invasion and that residual flora somehow exerts a controlling influence over the growth of invading organisms. They demonstrated that this control was not due to direct antibacterial action of the normal flora. Their studies and those of Dixon[15] indicate that peristaltic emptying of the small intestine is its primary defense against intraluminal bacterial accumulation. They concluded that though the normal flora does not influence mucosal resistance directly, it may alter enteric infection by affecting intestinal motility.

Bohnhoff[16] and Meynell,[17] respectively, have demonstrated the cecal and colonic flora to differ from that of the small intestine in that they have a direct inhibitory effect on the growth of potential pathogenic organisms.

Thus the exact pathophysiologic mechanism initiating psuedomembranous enterocolitis remains elusive and will remain so until sufficient knowledge is gathered on the normal interrelationship of the intestinal flora, potential intestinal pathogens, mucosa, and host resistance mechanisms within the gastrointestinal tract.

Summary

Two cases of pseudomembranous enterocolitis in infants presented here have markedly similar histories, with the presenting symptoms of intermittent abdominal obstruction and diarrhea from early neonatal life, the first case having Klebsiella as the predominant pathogenic organism isolated from urine, stools, and blood.

In the second case Klebsiella was isolated in the initial stool culture with subsequent cultures revealing coagulase-positive *Staphylococcus aureus* in addition. Numerous isolates from several areas of gastrointestinal tracts, as well as urine and blood cultures, in both infants lead us to believe that in these cases Klebsiella definitely was associated either directly or indirectly with the pseudomembranous enterocolitis terminating in acute diffuse serofibrinous peritonitis and subsequently the patient's death.

It behooves the physician to be aware of Klebsiella's potential pathogenicity and to maintain a high index of suspicion in diarrheal cases in which Klebsiella, either alone or in association with other pathogenic organisms, is found to be a predominant organism lest its presence be misinterpreted as that of a nonpathogenic contaminant of the intestinal flora and result in undue delay in appropriate therapy.

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Coronary Artery Ectasia—Kirschner, Perloff and Twigg

(*Continued from page 126*)

arteries were found to be aneurysmally dilated and tortuous. Ectasia of the coronary arteries has been described only once before in patients with chronic cyanotic congenital heart disease, but the degree of dilatation and tortuosity found in our patient has never been reported.

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Clinical Applications of Inhibition of Beta-adrenergic Receptors with Propranolol*

MORRIS STAMPFER, M.D.,† AND STEPHEN E. EPSTEIN, M.D.‡

PROPRANOLOL, the first clinically useful beta-adrenergic blocking drug, was recently placed on the market after several years of exhaustive clinical trials. On the basis of many investigations it appears that blockade of the beta-adrenergic receptors may be useful in the treatment of several types of cardiac problems. However, as with any potent drug, the physician must possess full knowledge of its mechanism of action and possible hazards before prescribing. This article is intended as a brief survey of the actions and uses of propranolol for the practicing physician.

Pharmacology

The work of Dale, Ahlquist and others has established the existence of different types of responses to adrenergic stimulation, dependent on the presence of either of 2 types of receptor sites in the tissues. For example, stimulation of alpha-adrenergic receptors causes constriction of blood vessels, while stimulation of beta receptors causes vasodilatation. Only beta receptors are located in the heart, and stimulation of these receptors results in an increase in the heart rate and the force of cardiac contraction. The endogenous catecholamines, epinephrine and norepinephrine, stimulate both alpha and beta receptors, while the catecholamine isoproterenol stimulates beta-adrenergic receptor sites exclusively. Although alpha-adrenergic blocking drugs have been known for many years, propranolol is the first generally available drug which antagonizes the action of catecholamines at the beta-adrenergic receptor sites, thus causing slowing of the heart rate and a decrease in the force of cardiac contraction.

Clinical Uses

Angina pectoris. Angina pectoris is due to a disproportion between the O_2 requirements of the myocardium and the O_2 supply so that the supply of oxygen is inadequate to meet myocardial metabolic demands. In theory, angina can be relieved either by increasing oxygen delivery or decreasing metabolic requirements. Since both heart rate and the force of contraction are important in determining the amount of O_2 required by the heart, propranolol, by decreasing these parameters during exercise, is often successful in relieving angina that is refractory to the more commonly used drugs. The dose required is highly variable and is best ascertained by starting with a small dose such as 10 or 20 mg. by mouth 4 times daily, and increasing gradually until attacks of angina are substantially reduced in frequency. Doses of 400 mg. daily or more have occasionally been used, although the most commonly required dosage ranges from 120 to 240 mg. daily. Very close observation of the patient is necessary since congestive failure may appear. Such symptoms may often be controlled with digitalis glycosides and diuretic agents. However, if these interventions are not successful in controlling symptoms of failure, propranolol must be discontinued.

Arrhythmias. Propranolol can be used in the treatment of various cardiac arrhythmias. Its beneficial effects are due not only to beta-adrenergic blockade, but in certain arrhythmias to a quinidine-like action as well.

Propranolol may abolish arrhythmias caused by digitalis intoxication, including frequent premature ventricular contractions and ventricular tachycardia. It should be stressed, however, that there is no evidence that propranolol is superior to some of the other commonly used antiarrhythmic agents.

In arrhythmias not due to digitalis, such as atrial fibrillation or atrial flutter with rapid ventricular response, propranolol usually can be relied upon to slow the ventricular rate. Recurrent attacks of paroxysmal atrial tachycardia may occasionally be reduced in frequency or prevented by propranolol, although sufficient information to assess long-term results is not yet available.

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* Submitted to the MEDICAL ANNALS by the Washington Heart Association.

† Associate in Medicine, Albert Einstein College of Medicine, Bronx, N.Y., 10461.

‡ Acting Chief, Cardiology Branch, and Chief, Section on Circulatory Physiology, Cardiology Branch, National Heart Institute, National Institutes of Health, Bethesda, Md. 20014.

When emergency treatment is required, propranolol should be given intravenously in doses of not more than 0.5 mg. every 3 to 4 minutes until the desired effect is achieved or signs or symptoms of worsening cardiac decompensation are noted. The drug should not be used in complete atrioventricular block with idioventricular rhythm unless a cardiac pacemaker is in place, since electrical activity may be slowed further or arrested.

Idiopathic hypertrophic subaortic stenosis. Propranolol has been found to be beneficial in many patients with idiopathic hypertrophic subaortic stenosis (IHSS). The exercise tolerance of those patients whose primary symptom is angina pectoris has been improved by propranolol, and the frequency of syncopal episodes and of arrhythmias can be reduced in other patients. The reason for this improvement probably is that obstruction to left ventricular outflow in IHSS is made worse by drugs or maneuvers that increase the contractile state of the heart, such as isoproterenol or exercise. Propranolol, by decreasing sympathetic stimulation of the heart, decreases this obstruction. This change is less marked at rest, when there is normally little sympathetic stimulation present, but becomes more significant during exercise.

It should be stressed that in patients with IHSS and congestive failure the drug may produce deleterious effects just as in patients with other types of heart disease who have signs and symptoms of cardiac failure.

Side-effects and Contraindications

By interfering with sympathetic stimulation to the heart, propranolol decreases the cardiac output response to exercise in normal subjects and thereby impairs their capacity to perform intense exercise. This effect demonstrates the significant role of the sympathetic system in the cardiac response to the stress of exercise. Propranolol also alters the diurnal pattern of sodium excretion in normal subjects and in patients with mildly impaired cardiac function. However, in patients with severe cardiac decompensation its administration may cause frank retention of sodium and fluid, changes resulting in progressive edema accumulation and symptomatic deterioration. Thus, in patients with heart disease whose cardiac reserve is diminished and who depend upon sympathetic support to maintain compensation, inhibition of cardiac sympathetic stimulation may lead to severe and sometimes irreversible symptoms of cardiac failure.

Other major side-effects that have been reported are severe hypoglycemic reactions occurring in patients taking insulin or oral antihyperglycemic agents, and acute pulmonary insufficiency due to bronchospasm, a complication that may occur in patients with obstructive airway disease.

Summary

Blockade of the beta-adrenergic receptors is of significant benefit in selected patients with various types of heart disease. Angina pectoris, digitalis-induced arrhythmias, atrial fibrillation and flutter, and idiopathic hypertrophic subaortic stenosis are conditions in which this drug may be useful. However, caution and continued close observation of the patient are always necessary because removal of sympathetic support to the failing heart may result in severe cardiac decompensation. Propranolol and other beta-adrenergic blocking drugs should not be administered to patients with congestive heart failure that does not respond to digitalis glycosides and diuretics, and to patients with atrioventricular block, unless a cardiac pacemaker is in place. In addition, they should be given with extreme caution to patients with obstructive airway disease and to patients taking insulin or oral hypoglycemic agents.

Percutaneous Chordotomy—Fox

(*Continued from page 134*)

8. Fox, J. L., and Green, R. C.: Percutaneous stereotaxic cordotomy. II. A guidance technique for the anterior approach. Acta Neurochir. (Wien), 1968, **18**, 318.
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10. Mullan, S., and others: Percutaneous interruption of spinal-pain tracts by means of a strontium-90 needle. J. Neurosurg., 1963, **20**, 931.

Some Data on the Life and Activities of Andreas Schnerch, 1765–1853

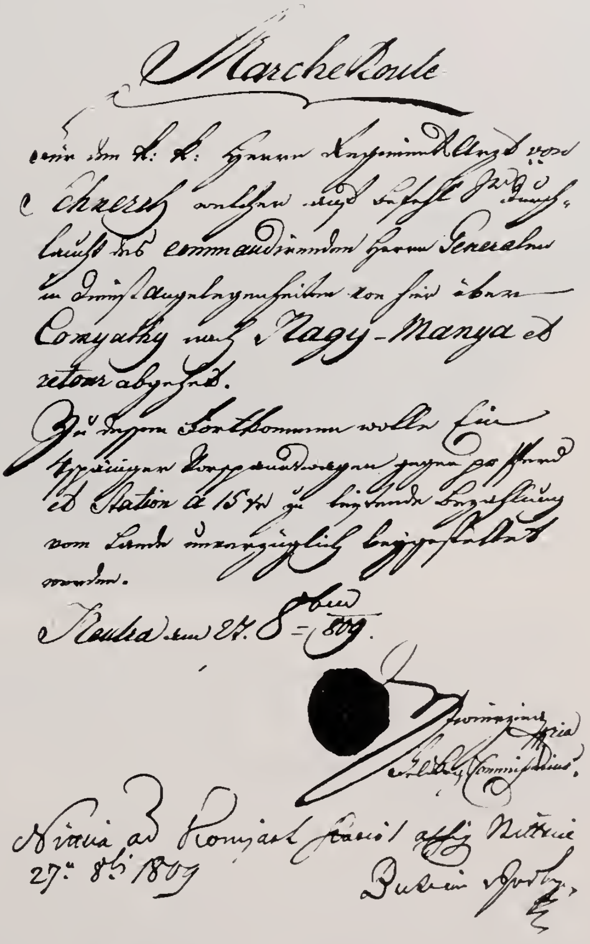
MIHÁLY BARTALOS, M.D.,* AND ÉVA P. BARTALOS, CAND. MED.†

At the height of his career Dr. Andreas Schnerch was a personal physician and court councillor to the wealthiest Hungarian magnate Eszterházy, or Graf und Fürst Esterházy von Galantha, as he was known in Austria. Because of the doctor's high and influential position in a turbulent time it appeared to be of interest to study his life and activities.

In the available literature we were unable to find any reference to Dr. Schnerch. The following is therefore the first such report based on documents which are in our possession.

Of his early years nothing is known. A letter addressed to him in 1796 reveals that he was a surgeon in the battalion of Nadasdi in Pavia, Italy. Most probably they were engaged in the first war against Napoleon. In January 1809 he was still in the army. An instruction manual for smallpox vaccination was signed by him when he had the rank of chief physician. Since the other signature was that of a field physician their association with the army is undoubted. The booklet contains a detailed and precise description of the procedures and also of vaccination reactions. An official military command of the same year has also been found. On August 27, 1809 he was directed to travel from Neutra, Hungary (Nyitra in Hungarian) through Comjáthy to Nagy Mánya and return (figure 1). In this record he is stated as being a regimental physician. Between 1798 and 1809 the wars against Napoleon were going on and this may lead us to suspect that in this period he served in the army uninterruptedly.

As to the time when he left the army, we lack any reference. In 1817 he was already a physician in the court of the Eszterházys. This is apparent from a letter notifying Schnerch of his additional appointment as court councillor with a yearly salary of 1,500 *goulden* (figure 2). "... I feel obligated to give an expression of my gratitude to you and as an appreciation of your merit ... I appoint you my princely court councillor ...," wrote Eszterházy. Schnerch must have been a good physician, recognized by both his colleagues and the public, for besides his high court position he received an invitation to attend Professor Isfordink's opening speech when he became the director of the Medizinische-Chirurgische Josephs Akademie (Medical School) of Vienna in 1822. An indication of the nature of his patients and his income is provided by a note recording his atten-



Marche Route

FIG. 1. Military communique of 1809 indicated that Dr. Schnerch was a regimental physician.

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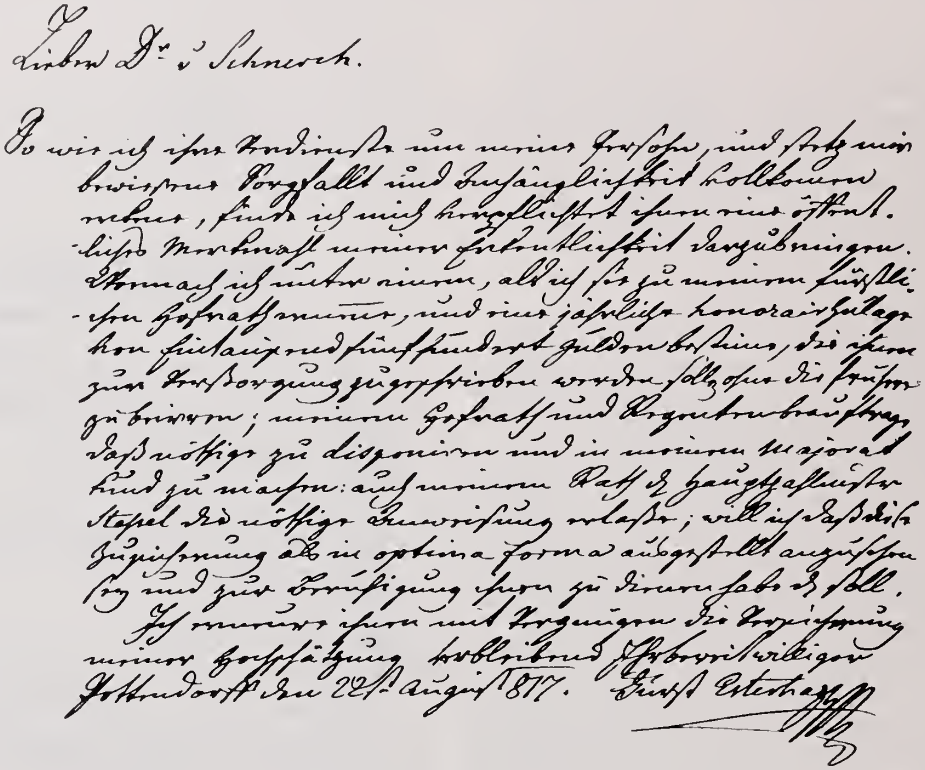
* Chief, Medical Genetics Unit, Department of Pediatrics, Howard University College of Medicine; present address: United States Public Health Service Hospital, Baltimore, Md. 21211.

† Address: 10063 Windstream Drive, Columbia, Md. 21043.

dance and medical care of Frau Marie Louise Plaideux Freyin von Mainau in the years of 1834 and 1835, for which he received 1,618 *goulden*. This is more than his yearly salary as court councillor. This record also indicated that he had Professors Zang and Hager as advisors on many occasions. The last record of his medical activity known to us is an autopsy note of April 4, 1834. The autopsy was performed on Johann von Karner, court councillor and office director in the court of Eszterházy. Schnerch is the first of the 4 physicians who signed the record. He was then 69 years old.



Lieber Dr. v. Schnerch.

So wie ich ihre Verdienste um meine Person, und stets mir bewiesenen Sorgfalt und Anhänglichkeit vollkommen erkenne, finde ich mich verpflichtet ihnen ein öffentliches Merkmahl meiner Erkenntlichkeit darzubringen. Demnach ich unter einem, als ich sie zu meinem fürstlichen Hofrath ernenne, und eine jährliche Honorarzulage von Eintausend fünfhundert Gulden bestimme, die ihnen zur Versorgung zugeschrieben werden solle, ohne die früheren zu beirren; meinem Hofrath und Agentenbeauftrage das nöthige zu disponieren und in meinem Majorat kund zu machen: auch meinem Rath u. Hauptcassier Stessel die nöthige Anweisung erlasse; will ich daß diese Zusicherung als in optima forma ausgestellt angesehen sey und zur Beruhigung ihnen zu dienen habe u. soll.

Ich erneuere ihnen mit Vergnügen die Versicherung meiner Hochschätzung verbleibend Ihr bereitwilligster

Pottendorff den 22t August 1817. Fürst Esterhazy

FIG. 2. Letter to Dr. Schnerch in 1817 appointing him court councillor.

Six years earlier he rented a nobleman's country house. As the contract reveals, the estate was located in the city of Szent Márton in Oedenburg (Sopron in Hungarian) County. Its earlier occupant was the late royal councillor and director of the Eszterházy domain Franz von Eötvös. Schnerch agreed to pay 10 *goulden* as a yearly rent for it to the Eszterházys. Whether he lived there for any time or not is not known. Letters written by him in the years 1837 and 1844 are dated in Vienna. Further letters addressed to him in 1852 and 1853 indicate that he lived at that time by the "Schwestern Klaubitz, Auf der Wieden, Favoritenstrasse No. 314 im I. Stock der dritte Stiege" in Vienna. His connection with the "Sisters Klaubitz" is not known. They were not related to him, since on the mourning card Magdalena Klaubitz announces Schnerch's death "in the name of absent relatives." She sent a telegram to Andreas Weinberger in Pösing, Hungary notifying him of his death. Schnerch died in Vienna, July 10, 1853 at the age of 88 years. The cause of his death, "lung paralysis," is given on the mourning card. He probably remained a lifelong bachelor.

In some of the cited records his name is written as "von Schnerch," i.e., appointment to court councillor, military order, etc. However, he never used the "von" in his signature or on his visiting card, and it did not appear on the official statement of the Court of Justice of Vienna and on the mourning card. Therefore, it is believed that he did not in fact have a noble status.

The coöperation of the families Weinberger and Farkas is greatly appreciated.

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Indication—Oral contraception.

Contraindications—Thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, undiagnosed abnormal genital bleeding.

Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven-to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	Mortality Rates		Hospitalization Rates (Morbidity)
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching.

The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test; pregnanediol determination.

References: 1. Inman, W. H. W., and Vessey, M. P.: Brit. Med. J. 2:193-199 (April 27) 1968. 2. Vessey, M. P., and Doll, R.: Brit. Med. J. 2:199-205 (April 27) 1968.

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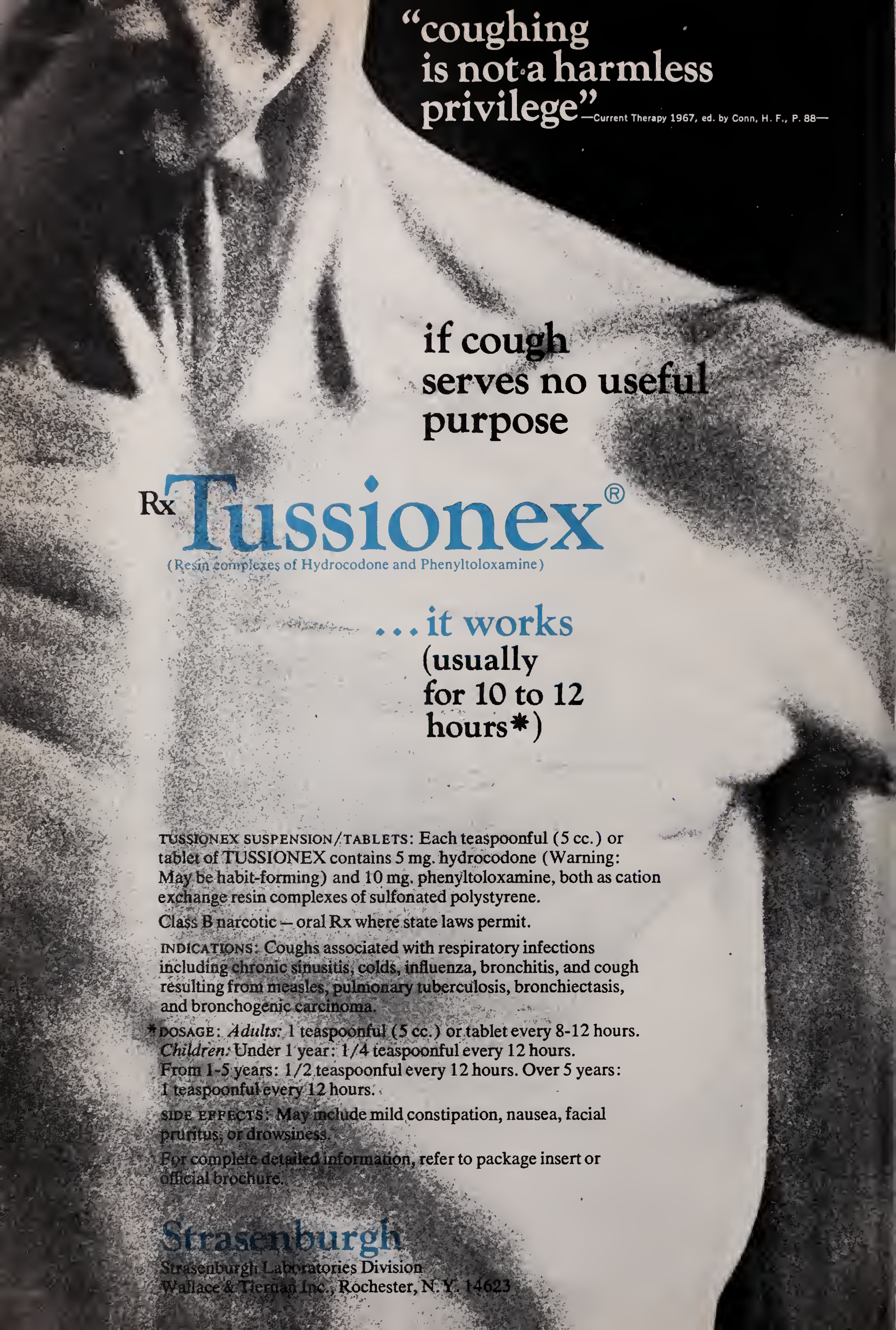

"coughing
is not a harmless
privilege" —Current Therapy 1967, ed. by Conn, H. F., P. 88—

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serves no useful
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*DOSAGE: *Adults:* 1 teaspoonful (5 cc.) or tablet every 8-12 hours. *Children:* Under 1 year: 1/4 teaspoonful every 12 hours. From 1-5 years: 1/2 teaspoonful every 12 hours. Over 5 years: 1 teaspoonful every 12 hours.

SIDE EFFECTS: May include mild constipation, nausea, facial pruritus, or drowsiness.

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President's Page

COMPREHENSIVE HEALTH INSURANCE FOR ALL

I believe that with the rapidly increasing cost of medical care, due to the great advances in medical science and continued inflation, there is a need for full-coverage health insurance. I believe that unless this insurance is supplied by private means the Government will take over. There is ample evidence that the public desires greater coverage of medical services. I suggest a plan whereby all people through advance planning can obtain comprehensive health insurance, with incentives for physicians and other suppliers to control costs and to improve efficiency in rendering services.

Comprehensive health insurance should be supplied by the private health insurance industry. The medically indigent must have, the low-income groups need, and the middle-income groups desire paid-in-full contracts. The high-income group may want this type of coverage although it benefits most by Major Medical insurance, with its deductible and co-insurance features, in catastrophic and prolonged illnesses. Comprehensive health insurance to cover all hospital costs and all medical and dental expenses in and out of hospitals should be made available. The medical insurance should include annual physical examinations with the necessary screening tests, all diagnostic X-ray laboratory and pathological services, radiation and chemotherapy, psychiatric care out of the hospital and emergency in the hospital, physical therapy, surgery including pre- and postoperative care, assistance at surgery, anesthetic services, maternity services including pre- and postnatal care, neonatal, infant and child care, prophylactic immunizations, ambulance service, prosthetic and orthopedic appliances, necessary durable equipment, necessary nursing care, drugs, dental care, vision care, consultations, and emergency care wherever required.

Payments to physicians and other suppliers should be on a usual, customary and/or reasonable basis as defined by the AMA. Payments should be geared to the income of the beneficiaries. Provision should be made so that price competition among suppliers is maintained. Refunds to beneficiaries should be made when charges are less than the customary levels. This should induce purchasers of services and supplies to seek the most economical source. The reasonableness of charges above the customary levels should be adjudicated by peers through their organizations.

Limits of payments to suppliers of services should be based on lower customary schedules for the lower-income groups, and this should be reflected in lower premiums. The customary schedule should be very low for the medically indigent, and premiums should be paid by community welfare agencies from tax funds. The schedule of fees should be progressively higher for the higher-income groups, and these people should pay proportionately higher premiums. Methods of controlling unnecessary utilization of services and supplies must be built into the system. Means of periodically increasing the level of payments to suppliers of services in order to keep up with increased costs, including increased cost of living, must be established. The customary charge schedules should be established by the local medical and dental societies.

In summary, the health insurance industry including Blue Cross, Blue Shield, and the commerical insurance companies must offer full-coverage comprehensive health insurance. The plans should cover similar services to people of all income levels, with low premiums for low-income groups, moderate premiums for middle-income groups, and high premiums or only Major Medical plans for high-income groups.

Editorials

A New Approach to the Doctor Shortage

That there is a great need for additional help to fulfill the health expectations of our expanding population is doubted by no one. The recognized need for more physicians was well acknowledged before the social and health legislation was enacted by the last administration. Indeed, large inducements were extended to medical schools to enlarge incoming classes in established schools and to build additional schools of medicine in an attempt to meet these anticipated personnel needs. Even with the addition of some 12 new medical schools and a 25 to 30 per cent increase in the enrollment of established schools of medicine, these needs will not be met now nor will they be for a number of years.

One possible solution in the form of a new professional practitioner in medicine (the Pediatric Associate) is announced in this issue of the Medical Annals. Similar experimental programs can be expected in other disciplines. Certainly every effort should be made to give this program a trial if we are to maintain responsibility for the delivery of health services.

In addition to the University of Colorado Pediatric Associate Program, the Bowman-Gray School of Medicine will initiate a similar program for Pediatric Assistants next spring. The need in pediatrics is accentuated by the observation that in 1980 over 76 million of the population of this country will be children. At the present rate of production of pediatricians there will be a deficit of over 80,000 trained pediatricians to meet this expanded child population. A Pediatric Assistant properly trained under the direct supervision of a pediatrician could be of tremendous assistance in the areas of patient screening, medical history-taking, and giving routine physical examinations. They could also serve in community health programs concerned with school health and at well-baby stations both in city and rural areas.

At the same time, concurrent shortages in all other health manpower services must be recognized, and efforts to expand personnel in the fields of nursing, social work, and all of the other fields must be vigorously supported.

It has been estimated that between 50 to 60 per cent of a physician's time is expended in matters that do not require his highly trained professional skills. More efficient use of his time could result through the employment of physicians' assistants, drawn from a variety of backgrounds, if legal and professional factors can be clarified and approved. The armed forces have successfully utilized similar trainees to reduce the physicians' work load and to disseminate a qualified level of medical care. Their corpsmen work under the direct supervision of physicians.

In a larger sense, the development of the instructional programs at the University of Colorado might well be extended to make it possible for experienced Pediatric Associates to later complete their medical education in order to qualify fully as medical practitioners.

F. G. B.

Parental Consent to Treatment of a Minor*

To resolve the issue of whether a mother's consent is legally sufficient to authorize a physician to treat her minor child it is necessary to draw a distinction between the parental right to services and the power to decide what risks the child will or will not undertake. The basis of the parental power to consent is the status of the parent as a child's guardian. (See Barker vs. Heaney [82 SW 2d 417, Tex, 1935].) The law defines guardianship as the status of the person lawfully invested with the power, and charged with the duty, of taking care of the person and/or

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Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

managing the property and rights of another person, who, for some peculiarity of status, or defect of age, understanding, or self-control, is considered to be incapable of administering his own affairs. The power of guardianship must be distinguished from the right to services which is, at most, an element of damages. The author of a study on the subject of guardianship observed that "... changes in the guardianship laws for more than a century have been to recognize the rights of a mother to her children . . . and to remove the disabilities for guardianship under which married women have suffered" (Taylor, H. B.: The Law of Guardian and Ward. Chicago: University of Chicago Press, 1935, p. 25). The same study indicates that, in 1930, 39 of the states regarded both parents as guardians (ibid., p. 32). Today, the statutes of some states specify who may consent to the treatment of a minor. Illinois, for example, has such a statute. It reads: "Surgery upon children—Consent by parents: Any parent, including a parent who is a minor, may consent to the performance upon his or her child of a medical or surgical procedure by a physician licensed to practice medicine and surgery" (Smith Hurd, Illinois Annotated Statutes, chap. 91, sec. 18.2).

In conclusion, let us observe that today exclusive guardianship powers in the father are a dead letter in the law and that parents share the authority to consent to medical treatment on behalf of their minor children. In most cases physicians will find it preferable to obtain the father's signature on the consent form in the space provided for the "signature of the parent or guardian." Not only is this procedure in accord with what we have seen to be the position of domestic preeminence that the father once enjoyed under the common law but, in most instances, it will reflect the traditional role of the male in our culture as the family spokesman. If the father is absent, then the physician should have no reservation about the capacity of the mother to act as the child's legal guardian.

AMA Introduces *Audio News Journal*

In a major communications effort aimed at enabling physicians to keep abreast of significant medical developments which are part of today's "information explosion," the American Medical Association introduced *Audio News Journal*, a new concept in medical reporting, in January.

Called the "living voice of Medicine," *Audio News Journal* is a once-a-month, 65-minute tape recording highlighting current medical events throughout the world. The recordings are playable at home, in the office, or in the car.

All coverage is live, with emphasis on news emanating from major medical meetings, new developments in the health field, and interviews with health professionals and public figures. Political, social and economic aspects of medicine will also be covered.

Subscribers may choose from 3 types of tapes, 8-track stereo, cassette or reel-to-reel. Annual subscription price for the service is $72 for physicians in the U.S., its Possessions, Canada and Mexico and $90 in all other countries. Charter subscribers are being offered 15 months of service for the price of 12. Orders should be directed to the AMA Circulation and Records Department, 535 North Dearborn Street, Chicago, Ill. 60610.

Drug Dependence—Amphetamines

Amphetamines (known as bennies, co-pilots, footballs, hearts, pep pills) are stimulants, prescribed by physicians chiefly to reduce appetite and to relieve minor cases of mental depression. They are often used to promote wakefulness and/or to increase energy.

Normal doses taken orally as a tablet or capsule produce wakefulness, increased alertness, and a feeling of increased initiative. Abusers may resort to intravenous injections which produce cocaine-like psychotoxic effects.

The abuser exhibits an almost abnormal cheerfulness and unusual increase in activity, jumpinese and irritability. There may be hallucinations and paranoid tendencies after intravenous use.

Amphetamines can cause high blood pressure, abnormal heart rhythms, and even heart attacks. Teen-agers often take them to increase their "nerve." As a result, they may behave dangerously. Excess or prolonged usage can cause hallucinations, loss of weight, wakefulness, jumpiness, and dangerous agressiveness. Tolerance to large doses is acquired by abusers; psychic dependence develops but physical dependence does not. There is no characteristic withdrawal syndrome.

Editor's note: For showing to teen-age groups a 16 mm. color print of the sound film, "The Trip Back," is made available by the New York *Daily News*, Public Relations Department, 220 East 42nd Street, New York, N. Y. 10017. There is no rental fee. The film presents Florrie Fisher, an addict for 23 years, who tells it "like it was—and is" to high school students.

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Formulas: Each 'Dexamyl' *Spansule* capsule No. 1 contains 10 mg. of Dexedrine® (brand of dextroamphetamine sulfate) and 1 gr. of amobarbital, derivative of barbituric acid (Warning, may be habit forming). Each 'Dexamyl' *Spansule* capsule No. 2 contains 15 mg. of Dexedrine (brand of dextroamphetamine sulfate) and 1½ gr. of amobarbital (Warning, may be habit forming).
Before prescribing, see complete prescribing information in SK&F literature or *PDR*.
Contraindications: Hyperexcitability, undue restlessness, hyperthyroidism, porphyria; in patients on MAO inhibitors.
Precautions: Use with caution in patients hypersensitive to sympathomimetics or barbiturates and in coronary or cardiovascular disease or severe hypertension. Excessive use of the amphetamines by unstable individuals may result in a psychological dependence. Rarely, symptoms of toxic psychosis (hallucinations, confusion, panic states, etc.) may occur with amphetamines, usually after prolonged high dosage. In these instances, withdraw the medication. Use cautiously in pregnant patients, especially in the first trimester.
Adverse Reactions: Overstimulation, restlessness, insomnia, g.i. disturbances, diarrhea, palpitation, tachycardia, elevated blood pressure, tremor, sweating, impotence and headache.
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GORDON S. SIEGEL, M.D.*

GOVERNMENT AS AN ENTERPRISE ranks third as an employer of United States civilians. It is outranked only by manufacturing and wholesale and retail trade. Governmental agencies employ 10 million of the 80 million workers in the United States labor force. These people are engaged in every conceivable occupation and are encountering all the modern demands and risks of earning a livelihood.

Government jobs are those at Federal, State, and local levels. State and local government employees now outnumber Federal civilian employees more than 2 to 1. Until recently Federal employment remained fairly constant, but State and local government increased steadily. State employment increased over 50 per cent in the past decade, and this rate is almost equaled by local government. As may be expected, both State and local employees are concentrated in thickly populated areas. Over 35 per cent of all State and 43 per cent of all local government employees are in New York, California, Ohio, Illinois, Texas and Pennsylvania. Five cities, Los Angeles, Chicago, New York, Detroit and Philadelphia, employ 23 per cent of all city employees. A distribution by function shows that one-half of all local, and one-third of all State employees, a combined figure of 3 million, are in educational work. Over 700,000 employees are in health and hospital work, 500,000 are with highway departments, and 345,000 provide police protection.

Although State and local governments are big businesses and constitute a "growth" industry, employee health services—as private industry knows them—are generally conspicuous by their absence. There is no simple answer as to why this is so, but Government viewed as an industry is unique. In function, in organization, in management, and perhaps most importantly in motivation, Government is critically different from private industry. Government is a profit-spending rather than a profit-making institution. Government is tax-supported rather than investment-supported. Government as a corporation, of and for all citizens, possesses unique powers and performs unique services.

The management of Government is thus necessarily shot through with an intricate, often cumbersome, system of checks and balances—red tape, if you will. However, this insures some level of protection for the citizen "stockholders." Perhaps because of its inherent power, and what they may see as increasing dependence on it, citizens often react with distrust or suspicion of Government as an employer. Those interested in the status and determinants of existing employee health services for State and local government employees are referred to Public Health Service Publication No. 1041, entitled "Occupational Health Services for Employees—A Guide for State and Local Governments," by McKiever and Siegel, obtainable from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.

As the largest single employer in the United States, the Federal Government takes no prize in the diversity, comprehensiveness, or excellence of occupational health services, judged by modern standards. But it is in the running. In 1946, impressed with experience gained in World War II, the 79th Congress passed Public Law 658, authorizing employee health services for Federal civilian employees. The law reads in part:

> "Be it enacted . . . that, for the purpose of promoting and maintaining the physical and mental fitness of employees of the Federal Government, the heads of departments and agencies, including Government-owned and controlled corporations, are authorized, within the limits of appropriations available to them, to establish by contract or otherwise, health service programs which will provide health services for employees under their respective jurisdictions . . . and only in localities where there is a sufficient number of Federal employees to warrant the provision of such services, and shall be limited to: (1) treatment of on-the-job illness and dental conditions requiring emergency attention; (2) pre-employment and other examinations; (3) referral of employees to private physicians and dentists; and (4) preventive programs relating to health."

Recently, and belatedly, in the Federal establishment there has been both management and employee recognition of occupational health as an important factor in efficiency and productivity. The spark of vitality was given by President

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*Director, Division of Federal Employee Health, Health Services and Mental Health Administration, Public Health Service, Department of Health, Education, and Welfare, 7915 Eastern Avenue, Silver Spring, Md. 20910.

Johnson on June 18, 1965. In a statement before his Cabinet the President said:

> "The efficiency and productivity of Government employees is one of our primary concerns . . . .
>
> "Employee productivity depends on a number of factors . . . but there is another factor we must not overlook—good health. In some ways it is the key factor . . . .
>
> "Good health and good work go together. Within the Government itself we must do all we can to avoid the waste that results from sickness and disease . . . .
>
> "If we can reduce the amount of sick leave taken by the average employee of just one-half day it means the equivalent of over 1 million man-days per year. We will improve the motivation and productivity of our employees and at the same time reduce costs through better placement and utilization . . . .
>
> "In the final analysis, it is up to each employee—and each top official—to take care of his own health. Health is a personal responsibility. I want to emphasize that . . . .
>
> "But, we can be a good employer. We can help our workers to maintain their health and thereby prevent the kind of illness and disablement that brings discouragement, hardship, and loss of productivity . . . .
>
> "Private industry in the United States discovered long ago that a good employee health maintenance program is a paying proposition.
>
> "The Federal Government has not kept up with the example set by private employers . . . .
>
> "I want that situation to change . . . .
>
> "I want the Federal Government to catch up with the practices of our efficient private enterprise—and in time become a model . . . . I have approved new guidelines for employee health service programs to be issued by the Director of the Budget. The Chairman of the Civil Service Commission will take the leadership in developing and improving this program in coöperation with the Secretary of Health, Education, and Welfare and the Secretary of Labor."

A directive simultaneously issued by the Bureau of the Budget states, in part: "The head of each department and agency, therefore, will review existing programs and is authorized and encouraged to establish an occupational health program to deal constructively with the health of the employees of his department or agency in relation to their work . . . such programs will ultimately provide employee health services of the scope specified in the Circular for all employees who work in groups of 300 or more." The scope of services authorized under Bureau of the Budget Circular No. A-72, June 1965, is essentially that endorsed by the American Medical Association in its statement on the scope, objectives, and functions of occupational health programs.

A closer look at the Federal establishment is informative and awesome. Federal civilian employment now approaches 2.9 million. An almost 10 per cent rise in 1966 and 1967 appears to have stemmed from 2 major developments, the growth of American participation in military actions in Vietnam and a sharp rise in postal volume. As a point of fact, the Department of Defense and the Post Office Department together employ some 2 million of the 2.9 million Federal workers. The remaining 900,000 serve in the myriad other activities and agencies of the Federal Government.

The 1965 Circular amplified and reinforced the Public Health Service role in Federal employee health, which was originally specified in Public Law 658. The Circular states: "Each department and agency head, after consulting with the Public Health Service as to occupational medical standards and methods . . . is authorized to establish, within the limits of available appropriations, an occupational health program with health services to be provided as he deems necessary." In addition, "The Public Health Service will advise departments and agencies, upon request, concerning their health-service programs by providing agencies with occupational health standards to guide the provision of the occupational health services herein authorized, and by evaluating agency health service programs in relation to such standards." The Public Health Service, and other Federal agencies, is empowered to enter into coöperative arrangements to furnish authorized employee health services when convenient and beneficial to the operation of the Federal establishment. This translated means that the Public Health Service is authorized to organize and operate employee health services for other Federal agencies on a reimbursable basis.

In June 1966 the United States Civil Service Commission, in a memorandum to the President, released a survey of Federal employees' occupational health programs. The Commission reported: "Approximately 75 per cent of Federal civilian employees surveyed have access to occupational health facilities." I take some issue with this finding because I believe that adequacy must be related to quality of occupational health facilities. If anything, the report highlights the unevenness and lack of comprehensiveness of occupational health services presently available. Skepticism of the possible interpretation that 75 per cent of Federal employees receive adequate occupational health services is reinforced by the report that only 61 full-time and 84 part-time Federal physicians provide these services (in addition to those physicians who are assigned to Federal medical care facilities such as hospitals and general medical-care clinics).

One hundred and forty-five physicians to provide occupational health services for 2.9 million employees (recognizing that some additional physician services are available from Federal hospitals and clinics) leaves much to be desired.

Today there are many different systems of occupational health services in the Federal Government, as befits this gargantuan operation. The Department of Defense and the Post Office Department operate their own employee health programs. Many other Federal departments operate their own services in whole or in part. (Examples are the excellent medical programs of the Department of State, National Aeronautics and Space Administration, and Social Security Administration.) Some Federal agencies contract with private sources for provision of services. One problem is the relative dearth of contractors willing and able to bid for the provision of such services.

Shortly after the enabling legislation was enacted in 1946, the Public Health Service began to provide consultation on Federal-employee health. Both environmental and personal health services were offered. Surveys were undertaken in major areas of Federal employment. Recognizing that practical experience was necessary for expert consultant ability, the Service operated several clinics, or health-units, for other Federal agencies on a reimbursable basis. The Korean War and a general rollback in Federal spending halted expansion in the early 1950's. Top Federal management generally acted as if occupational health services, as advocated by the Public Health Service, were employee benefits rather than management services, and program growth was stifled. Until the early 1960's, then, the Public Health Service activities were confined to answering a few requests for consultation and the operation of some 20 health units serving about 35,000 Federal workers.

The 1965 Presidential Policy Statement, stimulated by a new look in management attitudes in Government, was followed by a deluge of service and consulting requests. The response was predictable: "Reorganize." A neu Public Health Service Division of Federal Employee Health was established on June 1, 1966. The Division's mission is clearcut:

1. To provide expert consultation on Federal employee health programs.

2. To organize and operate occupational health (clinical) services for Federal agencies, on request, when feasible.

Requests for advice fall into several categories. There are requests for evaluations of ongoing programs. The Post Office Department recently received such a review. The Medical Director of the Post Office Department serves the largest single civilian enterprise in the United States. He directs a program for over 700,000 employees. The oft-lampooned dog-bitten postman is no laughing matter to him. Requests for evaluation of health services from elements of the Government that have never had them before are the most common. The Service has developed several manuals and guides over the years which are of great help. These guides must be modified to fit special needs; many of them are based on experience obtained while serving "white collar workers." However, at least 50 per cent of the Federal labor force is now "blue collar."

Receiving advice is one thing; obtained needed services is quite another. The Public Health Service plays a key role in attempting to provide services directly at Federal locations where there is multi-agency occupancy, such as a Federal office building. Our health unit in Chicago serves, and is reimbursed by, over 50 agencies. Presently the Service operates 70 health units; half are in the Washington, D. C. area and the remainder are scattered about the United States. We serve 135,000 Federal workers and over 600 Federal employers. Our health units are staffed with full-time Civil Service occupational health nurses. A few full-time Federal physicians staff our large clinics, but the majority of our clinics are served by part-time, local, private medical practitioners who serve on a professional services contractual basis. This arrangement has worked very well. It has strengthened Federal-community medical relationships and brings the vitality of the active, interested private practitioner into our units.

Based on Public Health Service experience, I have reached certain conclusions:

1. We must develop cost-benefit data for occupational health services in the Federal establishment. Physicians must assist management in obtaining such information. Cost-benefit analysis is today's method of management in the Federal Government.

2. All large Federal departments and agencies should have their own qualified, full-time medical directors. This is now the exception rather than the rule. These physicians must aid their managements in formulating programs of employee health services, and in obtaining such services to fit specific operating needs. The missions and roles of Federal departments and agencies are infinitely varied.

3. We need more experience with contracting of Federal occupational health services to private

sources, that is, with organizations which can formulate and operate efficient inplant medical programs. Competition would promote efficiency and needed research.

4. Contracting medical services is necessary; salaries offered to Federal physicians are rarely competitive.

5. Presently, most Federal employee health service programs relate little, if at all, to safety and environmental control efforts. This must change. Coöperation and mutual support between occupational medicine and environmental control services are just as essential in Government as in private industry.

The problems in governmental occupational health services are familiar. Management asks for quantifiable evidence that the provision of such services is worthwhile—the cost-benefit data referred to before. The shortage of medical, nursing, and paramedical personnel is having its effect on health-personnel costs. Government is no stranger to the still-to-be-solved "small-plant problem." Large numbers of Government employees work in small, frequently isolated groups. Sick-absence is of concern, and the pattern in Government is similar to that in private enterprise. Cultural factors regarding the use of sick-absence benefits seem to strongly influence their usage. Government has a very liberal policy regarding health standards and hiring. The result is undoubtedly felt in workmen's compensation and health-related disability retirement rates.

Finally, I believe that the fate of the world as we know it is strongly dependent on the productivity of some 5 million individuals—the Armed Forces and civilian employees of the United States Government. I am often asked, "Can Government afford good occupational health services?" I can only respond, "Can we afford to be without them?"

Pediatric Associate—A New Medical Practitioner

Two of the Nation's larger philanthropic foundations, Carnegie Corporation of New York and the Commonwealth Fund, announced support, December 15, of an experimental program to prepare a new type of professional practitioner in medicine, a Pediatric Associate, who, working under the supervision of a physician, will be qualified to examine and immunize well children and treat the more common childhood diseases. The project will be conducted by the University of Colorado School of Medicine under the direction of Dr. Henry K. Silver, Professor of Pediatries. Graduates of the program will receive a Bachelor of Arts degree from the University of Colorado.

The 2 Foundations are supporting the effort in approximately equal amounts, with 3-year grants to the School of Medicine totaling $450,000. The School has also received a $73,179 grant from the Bureau of Health Manpower for the first of 3 years' support.

The experimental curriculum that has been designed by the University of Colorado School of Medicine is focused on pediatric care and is intended to demonstrate that, with appropriate education and certification, a new category of health professional can be qualified for employment by doctors to assist them with specific aspects of their responsibilities that are now carried out by the doctors themselves and that consume much of their time and energy. The Pediatric Associate will make diagnoses and decide on and carry out appropriate measures for treatment. This will include the writing of prescriptions—exclusive of narcotic compounds—from an approved list of drugs. The limits of the Associate's medical-practice activities, however, will be clearly defined both legally and professionally. Proposed legislation will require that graduates of the Associates' curriculum be examined and certified by the Colorado State Board of Medical Examiners.

In their professional role, certified Associates will function within 2 chief safeguards. First, each Associate will serve under the personal direction and supervision of a particular physician. Second, the Associate will spend his time on well-child care, such as physical examinations and immunizations, routine hospital care for the newborn infant, and on minor ailments and injuries that are a normal part of childhood. He will be trained to recognize abnormal symptoms so that such cases can be detected early and placed in the physician's care. Even within these limits the Associate should be able to give medical care to about 80 per cent of the typical pediatrician's patients. This would provide the physician with more time to devote to seriously ill children and to keep abreast of advances in his field.

The experimental curriculum has been designed to lead to professional qualification 5 years after high school, including a year of internship.

Cancer of the Colon Mistaken for Diverticulitis

THROUGH THE COÖPERATION of Washington area physicians the Colon and Rectal Study Committee of the Medical Society of the District of Columbia has been analyzing clinical data on patients with these tumors who were admitted to D. C. hospitals during the last 3 years.* To date a total of 543 cases have been reviewed. Important data concerning the natural history of these tumors and their diagnosis and management have been collected in this study.

A cause of difficulty, at times, in the diagnosis of cancer of the colon is the presence of diverticula. The roentgenographic appearance and symptoms of diverticulitis are often similar to those of cancer. The confusion arising from this similarity is illustrated by the following case report.

Illustrative Case

A 63-year-old man had been seen by his physician in February 1967 with symptoms of left lower quadrant pain and diarrhea. Barium enema X-ray examination was reported as diverticulitis of the sigmoid and descending colon (figure 1). The patient was placed on a low-residue diet and was given antispasmodics. His physician instructed him to report any further gastrointestinal symptoms and to return for another barium enema. Occasional bouts of abdominal pain and diarrhea were noted during the course of the ensuing year, but the patient was not seen again until February 1968, when he reported a "heavy feeling" in the lower abdomen with a recent exacerbation of diarrhea and elevation of temperature. He was then started on a course of antibiotics. A mass was detected in the lower left quadrant of the abdomen, and the patient was hospitalized. Following a barium enema, X-ray examination showed a 10 cm. "apple-core" lesion having the appearance of a carcinoma in the region of the upper portion of the sigmoid colon (figure 2). A "tumor" was also noted in the left upper lobe of the lung. At laparotomy a carcinoma of the sigmoid was found. Subsequently the presence of metastatic disease of the lung was confirmed.

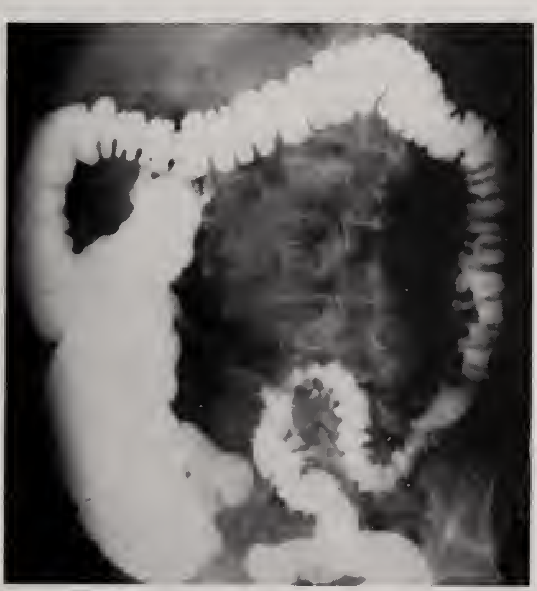

FIG. 1. Barium enema in February 1967 showing extensive diverticular disease.

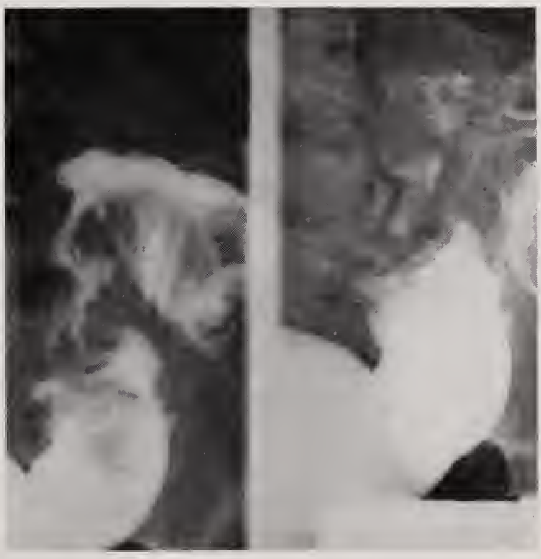

FIG. 2. Barium enema in February 1968 showing typical appearance of cancer of the colon.

This case illustrates the difficulty in ruling out cancer of the colon in the presence of diverticulosis or diverticulitis. Colonic symptoms may be falsely ascribed to diverticular disease when cancer either coëxists or subsequently develops. There is no easy solution to this problem. Symptom patterns may be identical. Both conditions occur in older-age groups, and the sigmoid is the most common site of both cancer and diverticulitis. Abdominal pain is more common in diverticulitis than in cancer, and rectal bleeding occurs somewhat more frequently with cancer, but even these symptoms are frequently misleading. Sigmoidoscopic examination does not always permit

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* The work of the Committee is supported by a grant from the American Cancer Society, District of Columbia Division.

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differentiation. In most instances reliance must be placed on the barium enema and the barium air-contrast enema. However, in 15 to 20 per cent of the cases the radiologist cannot distinguish between the 2 conditions. It is true that multiple perforations are usually the result of diverticulitis and that typical "lipping" is characteristic of cancer. Nevertheless, in certain cases, the 2 processes may be indistinguishable.

The only safe policy in this situation is to maintain a high degree of suspicion in all patients with colonic symptoms. Sigmoidoscopy and barium enema with air contrast are keystones to diagnosis and should be repeated in case of doubt. If the patient does not return as instructed he should be contacted by the physician. Finally, laparotomy may be necessary to exclude the possibility of colon cancer.

The magnitude of this clinical dilemma is attested to by the occurrence of 42 cases of associated diverticulosis or diverticulitis in patients with concurrent or subsequent cancer of the colon and rectum. These 42 cases were noted in a total of 543 cases of cancer of the colon which the committee has reviewed. Only with constant vigilance will this clinical pitfall be avoided.

Physicians in the area are cordially invited to attend the monthly case review meetings of this committee during which these and similar challenging clinical problems are discussed.

THE COMMITTEE

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HEALTH DEPARTMENT NOTES

Licensure of Extended Care Facilities

Through its Extended Care and Related Facilities Section the D. C. Department of Public Health is responsible for certification of various facilities furnishing health services to more than 3,500 persons. The certification is completed before the D. C. Department of Licenses and Inspection, issues operating licenses to the facilities.

Twenty-four of the 120 licensed establishments are extended care facilities (proprietary and nonprofit homes providing a variety of direct health services). The others are considered related facilities; these include 3 homes for unwed mothers, 3 homes for the care of mentally and physically handicapped children, 10 homes for the aged, infirm and blind, certified as room and board facilities, and 80 personal care homes.

The Health Department also is responsible for the certification of these facilities before they may participate in the Federally-sponsored Medicare and Medicaid programs. Less than half of the extended care facilities now participate in the Medicare (Title XVIII) program and even fewer in Medicaid (Title XIX), although many could qualify. One which does participate in both the Medicare and Medicaid programs is the 800-bed D. C. Village, an extended care facility for the medically indigent operated by the D. C. Department of Welfare.

In addition to its work for the improvement of services, skills and standards of extended care and related facilities in the District of Columbia and its interest in upgrading the quality of patient care, the Extended Care and Related Facilities Section also reviews and evaluates architectural plans for renovation and new construction of extended care and related facilities. This is to determine if the structure would provide for quality patient care.

The Section's staff includes a physician, a public health nurse, a nutritionist, a dentist, a social worker, recreational therapists, and podiatrists. While direct contact with patients is rare, each staff member performs an important function for the benefit of the patients by assisting owners, managers or operators of any of the facilities in finding solutions to problems which may arise in the care of the aged, infirm, sick or handicapped.

During the Section's inspection of each of the patient care facilities, its needs are identified and discussed with those in charge.

Personal care homes have a maximum of 4 patients. Along with these 4 patients no more than 6 individuals are permitted to reside in any personal care home. Usually the 2 who are not patients are the owner-operator and another adult who assists in the operation of the home.

The operator or manager of the personal care home is required to arrange for the services of a physician for any patient who does not have a doctor when the patient is admitted to the home.

Staff members and operators of personal care homes are required to undergo annual physical examinations, for both their own health protection and that of their patients.

In their surveys of facilities prior to certification for licensure, the Extended Care and Related Facilities Section utilizes existing resources of the Health Department, such as nurses and sanitarians; other District Government agencies, such as the Bureau of Vocational Rehabilitation and the Fire Department; and voluntary health organizations.

For example, our staff brought the need for a particular type of health service for the elderly in one home to the attention of a professional group specializing in that field. Members of the professional group became interested and have continued to help the patients in that home on a voluntary basis. We frequently are asked for help in development of suitable recreation programs for patients and in counseling on nutrition.

Nonprofit extended care and related facilities have been required to qualify for licensure only since 1965.

The comprehensive services of the Extended Care and Related Facilities Section are available to all such facilities within the District of Columbia or to any person or group considering construction or establishment of any extended care or related facility.

MURRAY GRANT, M.D., D.P.H.
D. C. Director of Public Health

"Submarine" for Research at Hospital for Sick Children

AT THE HOSPITAL FOR SICK CHILDREN at 1731 Bunker Hill Road, N.E. a unique Environmental Control Area, a submarine-type unit, has been constructed and is now in operation. Dr. Frederic G. Burke, Medical Director of the Hospital, presided at a dedicatory service, February 2, at the Hospital. Senator Edmund S. Muskie, of Maine, who has long been interested in the problems of air pollution, was the principal speaker.

The idea of the unit stemmed from a book, "Under the North Pole," written by Captain William R. Anderson of the U. S. Navy, wherein he described the excellent health of the crew members of the *Nautilus* when freed from air pollution.

The unit can duplicate any physical environment in the United States. From a control panel physicians will be able to control and monitor barometric pressure, temperature and humidity.

LAND-LOCKED 'SUBMARINE' FOR RESEARCH IN RESPIRATORY AILMENTS: Dr. Frederic G. Burke (left), Medical Director of the Hospital for Sick Children, and Dr. Robert E. Snell, Director of Research, with 2 young patients, are shown in the submarine-type unit just completed at the Hospital.

The 2 rooms in the unit will accommodate 3 children afflicted with asthma or other respiratory ailments for a treatment period of 3 weeks.

The studies are being supported by a 3-year grant of $340,000 from the National Center for Air Pollution Control Administration of the U. S. Public Health Service. Dr. Robert E. Snell, Director of Research at the Hospital, is the principal investigator. Assistant Professor of Pediatrics at Georgetown University, he will work closely with Dr. Burke, who is Professor of Pediatrics at Georgetown. The Hospital is affiliated with Georgetown Medical School.

DOCPAC BRIEFS

or

Meet Your Regional Representative, Mr. Combs

Recently the Board of Trustees of the American Medical Association instituted a reorganization. In implementing this reorganization the AMA Political Action Committee, or AMPAC, has been streamlined. AMPAC is now a part of the AMA's newly established Division of Public Affairs.

AMPAC remains medicine's sole vehicle for candidate support at the national level, and although this is not an election year the importance of AMPAC and its local chapter, DOCPAC, cannot be stressed strongly enough.

Through the streamlining that has been done by the AMA's Board of Trustees, added emphasis can be placed on political education. The AMA's new Division of Public Affairs will operate more economically and efficiently with the more readily available resources of both AMA and AMPAC.

Representing our DOCPAC chapter and the nearby states of Pennsylvania, Maryland and Virginia is a full-time man, Mr. Chad P. Combs. I have had the pleasure of working with Mr. Combs for the past 8 months. He is a most delightful and energetic person, dedicated to the best interests of our Government as well as to us in medicine. I hope that all of the members of DOCPAC will have the opportunity to meet Mr. Combs. Perhaps some of you did for he was at our last Scientific Assembly and will be at our next one.

If you do not understand the aims of AMPAC and DOCPAC, please contact either Mrs. Ann Rapee at Emerson 5-0222, or myself at Federal 7-2727, or any of our Board of Directors.

For 1969 we have 3 new members on the Board of Directors. They are Mrs. W. Robert Perkins, Jr., Dr. David H. Bachhuber, and Dr. Theodore F. Blackwelder.

If you have not sent in your dues for DOCPAC for 1969 please do so. They are $20 (family, $30). Send to DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D. C. 20007 or to the Medical Society, 2007 Eye Street, N.W. (20006).

William H. Cooper, M.D.
Chairman, D. C. Political Action Committee

Course on Medical Aspects of Radiological Health

May 26, 27, 28, 1969

Because medical and dental X-rays comprise the largest source of man-made radiation exposure to the population, efforts are increasing to reduce such exposure to the minimum consistent with good medical practice. Physicians today must be thoroughly knowledgeable of the uses, effects, and methods of minimizing radiation exposure. Such knowledge is necessary to respond to misinformation and exaggerated public concern, to see that X-ray equipment and techniques are maintained in compliance with applicable safety standards, and to derive the full benefit from available X-ray devices. This intensive 3-day presentation will provide the physician with the basic knowledge needed to accomplish this goal. Although information will be given on improving diagnostic quality of X-ray films, the course is not intended as a substitute for training in clinical radiology.

This course includes demonstrations and laboratory exercises on patient protection, shielding and scattering of X-rays. Basic information will be presented on effects of radiation, radiation units and standards, detection equipment, and properties and production of X-rays. Fundamental information relative to the problems associated with the use of radium and other radioactive material will also be presented. Each day's session will begin promptly at 9:00 a.m. and will adjourn at 2:00 p.m., allowing the participants time for afternoon office appointments. Tuition is $15.00. For applications, please contact Dr. John P. Adams, Chairman, Committee on Continuing Medical Education, George Washington University Medical Center, 2150 Pennsylvania Avenue, N.W., Washington, D. C. 20037; telephone: (202) 331-6691.

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While the pain and discomfort of a G.U. infection are anything but pleasant, the patient may be luckier than she realizes. That burning sensation (and/or frequency, urgency, dysuria) is a usually reliable sign of a urinary tract infection. And it's her good fortune that her infection won't go undetected...or untreated.

Azo Gantanol® therapy usually provides analgesic action within one-half hour, while control of the infection begins within two hours. Azo, a specific urinary analgesic, soothes inflamed mucosa to give symptomatic relief. At the same time, the antibacterial component, Gantanol (sulfamethoxazole), achieves therapeutic levels in the blood and urine, with diffusion into interstitial fluids. Azo Gantanol—a good choice when urinary tract infection reveals itself through symptomatic distress.

Before prescribing, please consult complete product information, a summary of which appears on opposite page.

Azo Gantanol®

(Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.)

Azo for the pain Gantanol® (sulfamethoxazole) for the pathogens

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Urinary tract infections with associated pain or discomfort when due to susceptible organisms; prophylactically in urologic surgery, catheterization and instrumentation.

Contraindicated in sulfonamide-sensitive patients, pregnant females at term, premature infants, newborn infants during the first three months of life, glomerular nephritis, severe hepatitis, uremia and pyelonephritis of pregnancy with gastrointestinal disturbances.

Warnings: Use only after critical appraisal in patients with liver damage, renal damage, urinary obstruction or blood dyscrasias. If toxic or hypersensitivity reactions or blood dyscrasias occur, discontinue therapy. In closely intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed.

Precautions: Observe usual sulfonamide therapy precautions including maintenance of an adequate fluid intake. Use with caution in patients with histories of allergies and/or asthma. Patients with impaired renal function should be followed closely since renal impairment may cause excessive drug accumulation. Occasional failures may occur due to resistant microorganisms. Not effective in virus and rickettsial infections.

Adverse Reactions: Headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, Stevens-Johnson syndrome, injection of the conjunctiva and sclera, petechiae, purpura, hematuria or crystalluria may occur, in which case the dosage should be decreased or the drug withdrawn.

Dosage: Adults—4 tablets initially, then 2 tablets morning and evening.

How Supplied: Tablets, bottles of 50.

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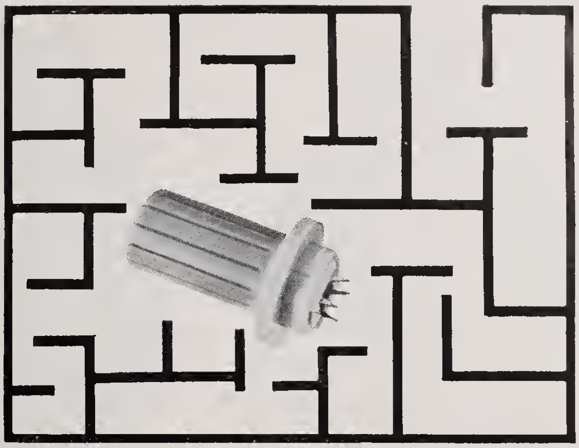

HISTO IS CONFUSING.

Histoplasmosis can mimic such unrelated diseases as TB, leukemia, pneumonia and syphilis. Use the blue Histoplasmin LEDERTINE™ Applicator as the first step in differential diagnosis and as a routine step in physical examinations for the permanent records of your patients.

HISTOPLASMIN, TINE TEST
(Rosenthal)

Precautions—Nonspecific reactions are rare, but may occur. Vesiculation, ulceration or necrosis may occur at test site in highly sensitive persons. The test should be used with caution in patients known to be allergic to acacia, or to thimerosal (or other mercurial compounds).

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MEETINGS, SEMINARS in refreshing country-estate atmosphere. Now booking groups of 30 to 60 currently; up to 300 for late 1969, 1970. Golf. Mixed Beverage License Reservations, brochure, call (in D.C.) 298-7171.

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Charlottesville, Virginia

AMA-ERF Benefit

on

DOCTORS DAY, March 30, 1969

Cocktail-Buffet at the Embassy of Morocco

2900 Cleveland Avenue, N.W.

6:30 to 9:30 p.m.

Tickets: $30 couple; $15 single

●

Physicians, wives and guests invited to this gay social event.

●

Sponsored by the Woman's Auxiliary
to the
Medical Society of the District of Columbia

Patients Needed at Clinical Center

The coöperation of physicians is requested in the referral of patients for a study of the efficacy of myocardial revascularization for the treatment of coronary artery disease which is being conducted by the National Heart Institute at the Clinical Center, National Institutes of Health, in Bethesda, Md.

Any patient below 60 years of age, with severe angina pectoris, will be considered. Each patient will have a complete diagnostic evaluation, including cardiac catheterization and coronary angiographic studies. If indicated, operative intervention will then be offered.

Physicians interested in having their patients considered for this project may write or call Dr. Stephen Epstein, Clinical Center, Room 7B-15, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-5817.

The coöperation of physicians is also requested in the referral of patients with pancreatic tumors and watery diarrhea for a study being conducted by the Metabolic Diseases Branch of the National Institute of Arthritis and Metabolic Diseases at the Clinical Center of NIH.

Also of interest in this study are tumor tissue, serum, or urine from such patients for assay.

Physicians interested in having their patients considered for admission to this study, or who have material for assay, may write or telephone (collect) Dr. Robert S. Gordon, Jr., Clinical Center, Room 9N-222, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-4181.

► NEW MEMBERS

Active

Charles Wesley Brandt, M.D. Office: 1234 19th Street, N.W. Born in Richmond, Va. Medical degree: Medical College of Virginia, 1961. Specialty: Internal Medicine.

Nathaniel Thomas Connally, M.D. Office: 1835 Eye Street, N.W. Born in Norfolk, Va. Medical degree: University of Virginia, 1962. Specialty: Internal Medicine.

Virginia Grace Ingram, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in Norwalk, Ohio. Medical degree: Western Reserve University, 1955. Specialty: Pediatrics.

Esmail Rafi, M.D. Office: 2108 G Street, N.W. Born in Rashti, Iran. Medical degree: University of Tehran, Iran, 1957. Specialty: Internal Medicine.

Harold Leon Rudman, M.D. Office: 901 23rd Street, N.W. Born in Springfield, Mass. Medical degree: University of Vermont, 1959. Specialty: Anesthesiology.

Anthony Evans Watkins, M.D. Office: U. S. Public Health Service. Born in Revere, Pa. Medical degree: Howard University, 1966. Specialty: General Practice.

Associate

Daniel Davis Bosis, M.D. Office: 701 Brantford Avenue, Silver Spring, Md. Born in Cleveland, Ohio. Medical degree: Western Reserve University, 1960. Specialty: Psychiatry.

Francis Michael King, M.D. Office: Armed Forces Institute of Pathology. Born in Chicago, Ill. Medical degree: Northwestern University, 1957. Specialty: Pathology.

Elmo Francis Masucci, M.D. Office: Veterans Administration Hospital. Born in Scranton, Pa. Medical degree: Hahnemann Medical College, 1945. Specialty: Neurology.

A once-popular treatment for back pains was to have the seventh son of a seventh son stand or walk on the patient's back.

The pain of earache was allegedly relieved by holding a hot roasted onion to the ear.

For headache, a sovereign remedy was to wear a snakeskin round one's head.

A realistic approach to pain relief

Empirin'®

Compound with Codeine Phosphate gr. 1/2 No. 3

Each tablet contains:
Codeine Phosphate gr. 1/2 (Warning—May be habit forming), Phenacetin gr. 2 1/2, Aspirin gr. 3 1/2, Caffeine gr. 1/2.

keeps the promise of pain relief

'B.W. & Co.' narcotic products are Class "B", and as such are available on oral prescription, where State law permits.

BURROUGHS WELLCOME & CO. (U.S.A.) INC.
Tuckahoe, N.Y.

PRELUDIN
PHENMETRAZINE HYDROCHLORIDE

Preludin®
phenmetrazine hydrochloride

Preludin is indicated only as an anorexigenic agent in the treatment of obesity. It may be used in simple obesity and in obesity complicated by diabetes, moderate hypertension (see Precautions), or pregnancy (see Warning). *Contraindications:* Severe coronary artery disease, hyperthyroidism, severe hypertension, nervous instability, and agitated prepsychotic states. Do not use with other CNS stimulants, including MAO inhibitors. *Warning:* Do not use during the first trimester of pregnancy unless potential benefits outweigh possible risks. There have been clinical reports of congenital malformation, but causal relationship has not been proved. Animal teratogenic studies have been inconclusive. *Precautions:* Use with caution in moderate hypertension and cardiac decompensation. Cases involving abuse of or dependence on phenmetrazine hydrochloride have been reported. In general, these cases were characterized by excessive consumption of the drug for its central stimulant effect, and have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations or delusions. Do not exceed recommended dosage. *Adverse Reactions:* Dryness or unpleasant taste in the mouth, urticaria, overstimulation, insomnia, urinary frequency or nocturia, dizziness, nausea, or headache. *Dosage:* One 25 mg. tablet b.i.d. or t.i.d. Or one 75 mg. Endurets tablet a day, taken by midmorning. *Availability:* Pink, square, scored tablets of 25 mg. for b.i.d. or t.i.d. administration, in bottles of 100 and 1000. Pink, round Endurets® prolonged-action tablets of 75 mg. for once-a-day administration, in bottles of 100 and 1000. (B) R3-46-560-B

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For complete details, please see full prescribing information.

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Preludin® Endurets®
phenmetrazine hydrochloride prolonged-action tablets

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ENDURETS
PROLONGED - ACTION
TABLETS

They run a good chance of losing weight.

Exercise and Preludin run together in helping patients to lose weight.

Preludin often puts a natural curb on appetite and frequently promotes a sense of well-being. By boosting a dieter's spirit, Preludin may help patients get the exercise you may prescribe.

One Endurets tablet taken between breakfast and midmorning usually provides daylong and early-evening suppression of appetite.

Mild ulcerative colitis may be triggered here...

In mild ulcerative colitis, a number of factors can precipitate an attack: for instance, dietary indiscretion, such as eating raw foods, or emotional overreaction, such as that aroused by financial difficulties. No matter what causes the patient's sensitive colon to "act up," he soon suffers from acute discomfort...and often, from anxiety and apprehension as well. Such patients frequently respond well to adjunctive dual-action Librax® therapy.

Librax combines, in a single convenient capsule, the well-known antianxiety effect of Librium® (chlordiazepoxide HCl) and the dependable anticholinergic / antispasmodic effect of Quarzan® (clidinium Br). Therefore, as Librax helps to relieve the patient's excessive anxiety and reduce his overreaction to stress, it also, at the same time, helps to control hypersecretion and hypermotility, thus relieving spasm and abdominal discomfort.

With Librax, the dosage schedule is simple: 1 or 2 capsules, t.i.d. or q.i.d., will in most cases bring the patient significant relief of both the emotional and physical elements that contribute to his psychovisceral disorder.

Before prescribing, please consult complete product information, a summary of which follows.

INDICATIONS: Indicated as adjunctive therapy to control emotional and somatic factors in gastrointestinal disorders.

CONTRAINDICATIONS: Patients with glaucoma; prostatic hypertrophy and benign bladder neck obstruction; known hypersensitivity to chlordiazepoxide HCl and/or clidinium bromide.

WARNINGS: Caution patients about possible combined effects with alcohol and other
depressants. As with all CNS-acting drugs,
tion patients against hazardous occupation
quiring complete mental alertness (*e.g.*, opera
machinery, driving). Though physical and
chological dependence have rarely been repo
on recommended doses, use caution in
ministering Librium (chlordiazepoxide hy
chloride) to known addiction-prone individ
or those who might increase dosage; withdr
symptoms (including convulsions), follo
discontinuation of the drug and similar to t
seen with barbiturates, have been reported.
of any drug in pregnancy, lactation, or in wo
of childbearing age requires that its pote
benefits be weighed against its possible haz
As with all anticholinergic drugs, an inhibi
effect on lactation may occur.

PRECAUTIONS: In elderly and debilit
limit dosage to smallest effective amount to
clude development of ataxia, oversedatio
confusion (not more than two capsules per
initially; increase gradually as needed and t

or here.

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. Though generally not recommended, if
bination therapy with other psychotropics
s indicated, carefully consider individual
macologic effects, particularly in use of po-
ating drugs such as MAO inhibitors and
othiazines. Observe usual precautions in
ence of impaired renal or hepatic function.
doxical reactions (*e.g.*, excitement, stimula-
and acute rage) have been reported in psy-
ric patients. Employ usual precautions in
ment of anxiety states with evidence of im-
ing depression; suicidal tendencies may be
nt and protective measures necessary. Vari-
effects on blood coagulation have been
rted very rarely in patients receiving the
and oral anticoagulants; causal relation-
has not been established clinically.
VERSE REACTIONS: No side effects or
ifestations not seen with either compound
e have been reported with Librax. When
rdiazepoxide hydrochloride is used alone,
vsiness, ataxia and confusion may occur,
cially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally with chlordiazepoxide hydrochloride, making periodic blood counts and liver-function tests advisable during protracted therapy. Adverse effects reported with Librax are typical of anticholinergic agents, *i.e.*, dryness of mouth, blurring of vision, urinary hesitancy and constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diet.

two good reasons for prescribing LIBRAX®

Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br.

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Public Enema No.

Claim the rewards of sparing your patients the tubes and tribulations of unpleasant enemas.

Compared to enemas, Dulcolax suppositories are a gentler and simpler way to empty the bowel. Gone are the tubing, the "accidents", and the bruised egos. Just one suppository, inserted against the bowel wall, usually brings about an evacuation within 15 minutes to an hour.

In the hospital, order Dulcolax for constipation or bowel cleansing. Your patients will often prefer it t embarrassing enemas. And you can be sure nurses will appreciate the saving in time and effort.

Dulcolax tablets taken at night usually result in a bowel movement the following morning. A combin tion of tablets at night and a suppository the next morning generally cleans the bowel thoroughly in preparation for surgery or special procedures. Kee in mind, however, that the drug is contraindicated the acute surgical abdomen.

Dulcolax®...it's predictable

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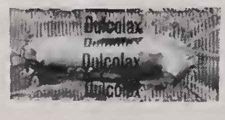

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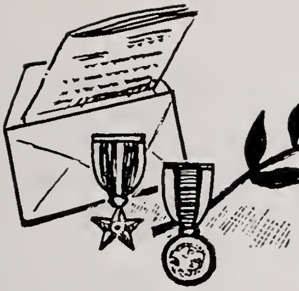


News & Personals

Summary of Executive Board Actions

Proceedings of January 27 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting, which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Thomas M. Arnett, Robert J. Coffey, Henry D. Ecker, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Present by invitation was Dr. Arthur E. Wentz, Coördinator of RMP in the Washington Metropolitan Area. The meeting was called to order by Dr. Wilner at 7:15 p.m.

The minutes of the December 16, 1968 Board meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

December	17	Grievance Committee
	17	Relative Value Study Committee
	19	Committee on Occupational Health
	19	Liaison Committee with Medical Schools
	20	Committee on Blood Banks
	30	Program Committee for 1969 Scientific Assembly
January	7	Board of Credentials
	8	Fee Review Committee
	9	Traffic Committee
	9	Physicians' Placement Committee
	10	Committee on Emergency Medical Services
	14	Liaison Committee with the Clergy
	15	Committee on Medical Ethics
	21	Grievance Committee

Board of Credentials: On recommendation of the Board of Credentials, 6 applicants were elected to Active membership and 3 to Associate membership. Their names appear on page 166. Approval was given to the following changes in membership status:

Transfers

Active to Special: Clayton B. Ethridge and Clayton H. Hixon

Active to Associate: William T. Lady, Bruce Henry Sklarew, Shirley Sue Martin and Hyman Joseph Zimmerman

Active to Resident Intern: Mihaly Bartalos

Resignations

Active: Charles Wendell Freeman

Associate: Walter Atkinson, Garry S. Brody, Joseph W. Cooch, Charles D. Daily, Jr., Jean O. Feys, Maurice H. Friedman, Jean D. Lockhart, Erwin G. Pese, Anna Maria L. Van Rooy and Raymond O. West

Having fulfilled the requirements of the Constitution and By-laws, the following members were confirmed as Life members:

Montgomery Blair, Jr.
Walter W. Boyd
Richmond C. A. Brooks
Robert U. Cooper
Edward H. Cushing
Benjamin F. Dean
George J. Ellis
Aubrey D. Fischer
Eugene A. Forcione
Alec Horwitz
Edward A. Krause
C. Herbert Marshall, Jr.
Bernard Notes
Edward M. O'Brien
James A. O'Keefe
X. Charles Suraci
Alexander Tish

The Secretary was requested to advise the Membership Committee on the first of November of each year the names of those members whose dues for the current year were still outstanding, in an effort to reduce the list of delinquents.

The Board voted to accept the recommendation of Dr. Bacon that Dr. Philip R. James be appointed Chairman of the Board of Credentials and Dr. Edwin P. Parker III, Vice Chairman.

Report on Regional Medical Program: Dr. Wentz gave a progress report on the activities of the Regional Medical Program, highlighting certain budgetary items for the fiscal year beginning March 1, 1969. Final and approved budgetary figures will be presented upon written advice from H.E.W. His expansion program within his own office can now be accomplished in the Society's building, he said, with the release to him by Mr. Sadler of the room adjoining the present RMP office.

Therapeutic Abortion: A letter of December 28, 1968 from Dr. E. Robert Moran, Jr., urged the Society to get facts and figures regarding the extent of therapeutic abortions in D. C. The Board voted to refer the letter to the Committee on Maternal Welfare for its consideration.

1975 Clinical Convention of the AMA: It was decided to invite the American Medical Association to hold its 1975 Clinical Convention in Washington.

Committee on Mental Health: The Board approved the recommendation of the Committee to change the question, "Have you ever had a nervous breakdown?" to, "Have you had a nervous breakdown within the last 3 years?" on auto drivers' applications.

Press-TV Dinner: Approval was given to the request of Dr. Warren D. Brill, Chairman of the Committee on Public Information and Education, to hold a news media dinner in 1969 prior to the Scientific Assembly.

Delegates' Report on AMA Clinical Session: Because members of the Board had earlier reviewed the Delegates' report on the AMA meeting, the Chairman asked Dr. Hughes if he would cite some highlights, which he did. Following discussion of the report a motion was made and carried to refer to the Committee on Constitution and By-laws, for its consideration, that section of the delegates' report which states: "State and national medical societies were urged to establish uniform membership classifications based on AMA membership categories described in the By-laws."

A second motion was made and carried that the portion of the delegates' report dealing with "usual," "customary," and "reasonable" fees be forwarded to the Fee Review Committee with the request that the Committee consider the adoption and use of this terminology and discuss the use of such terminology with insurance carriers.

Dr. Wilner requested Dr. Hughes to discuss with the Chairman of the Committee on Liaison with Medical Schools his remarks regarding medical student groups.

It was agreed that the Society should consider setting up an appropriate mechanism to admit osteopaths to its membership.

Luncheon Meeting with Dr. Grant: Dr. Bacon reported on his January 27 luncheon meeting with Dr. Grant. He stated that Dr. Grant was in agreement to include in the proposed amendments to the Licensure Law the recommendations of the osteopaths; that he will support the Society in every way in getting the amendments passed; and that, in his opinion, the only area of controversy now involves the composition of the Board.

There was some discussion concerning the Washington Free Clinic, located at 1728 21st Street, N.W., which offers free medical and psychiatric care to the public. Some of the participating physicians at this clinic are Society members. Dr. Grant had received a letter asking for assistance from the Public Health Department for the clinic, primarily supplies, equipment, etc. In response to Dr. Grant's question, Dr. Bacon stated that the Society had no objection to the clinic providing those treated were welfare cases. So that all may be better informed, Dr. Grant stated that he would try to arrange for a conference with officials of the Washington Free Clinic, Dr. Bacon, and himself.

Dr. Grant had stated that the Medicaid program is going well after a period of 3½ months of operation. He reported that all bills are being paid regularly, once monthly. He also reported that they are picking up some questionable bills, i.e., unusually high, for services not required, etc. Dr. Bacon agreed with Dr. Grant that it is important to set up a "policing procedure." They also discussed the problem of policing non-Society members. Dr. Grant stated that an analysis is being made of fees in 30 states to see how Medicaid fees elsewhere compare with those in the District. Statistically, Dr. Grant pointed out the following: In 2 months, of the 120,000 eligible for Medicaid, 65,000 had been certified and 12,162 persons had received treatment. By January 13, 391 physicians had signed up to participate in Medicaid and 84 had seen patients; the average bill was $15.64.

At Dr. Bacon's request, the Society will be provided with a copy of the Public Health Department's budget and a future meeting will be devoted to a discussion of the budget.

Dr. Grant reported that the Neighborhood Health Center Program is going quite well now. A 2-day conference is scheduled for sometime in April for evaluation of the Program, and Dr. Grant hoped that the Medical Society would have a representative present.

Other Business

1. The Secretary announced that the Alaska State Medical Association was inviting our So-

ciety to send a representative to its annual meeting in June, 1969. The Secretary was instructed to respond by sending a congratulatory letter to the Alaska Society, stating that if a Society representative does plan to attend it will be advised at a later date.

2. "Physical Fitness and Medical Aspects of Sports" will be the subject of a program to be presented in the Exhibit Hall on March 5.

3. President Bacon reported that he had discussed with Dr. John R. Pate a proposed campaign on vaccination against rubella. The Board authorized Dr. Bacon to send a letter to Dr. Pate endorsing this proposed program.

There being no further business, the meeting was adjourned at 10:00 p.m.

MEETINGS

The Department of Pediatrics at Georgetown University Medical Center will sponsor its **Annual Postgraduate Symposium** on Wednesday, April 9, in the Gorman Auditorium on the subject, "Current Problems in Clinical Pediatric Practice." Guest speakers will be Dr. Sydney S. Gellis, Pediatrician-in-Chief of New England Medical Center Hospitals, and Dr. Margaret H. D. Smith, Professor of Pediatrics and Epidemiology of Tulane University. There is no registration fee and all in attendance will be invited to a buffet luncheon. Advance registration is requested. Apply to the Department of Pediatrics, Georgetown University Hospital, 3800 Reservoir Road, N.W., Washington, D. C. 20007.

The day will close with a dinner-dance at the International Club of Washington, with cocktails at 6:30 p.m. The annual presentation of the Pediatrician-of-the-Year Award will be made at the social event. The charge is $10.00 per person.

The Sibley Hospital Medical Association will hold its **Annual Scientific Meeting** on Saturday, April 12. The meeting will open at 9 a.m. in the Ernst Auditorium with a Symposium on Problems of the Adolescent; panelists will include a psychiatrist, pediatrician, gynecologist, neurologist, and an orthopedic surgeon. There is no registration fee and all interested physicians are invited. Dr. Leon M. Liverett, President of the Association, will preside at the meeting and the luncheon to follow.

In the evening members of the Association will gather at the Sheraton-Park Hotel for a dinner dance.

Forty-fifth Kober Lecture

Gorman Auditorium
Georgetown University Hospital

Wednesday, April 23, 1969—8 p.m.

SPEAKER:

Captain Walton L. Jones, MC, USN (Ret.)

Director, Biotechnology and
Human Research Division, Office
of Advanced Research and
Technology, National Aeronautics
and Space Administration

SUBJECT: "Biotechnology for Future Space Flight"

ADMISSION FREE

Members and guests of the Medical Society
of the District of Columbia are
cordially invited to attend.

"Morality and Psychiatry" will be the theme of the **Annual Meeting of the National Guild of Catholic Physicians** to be held at Catholic University in Washington, April 12 and 13. Subjects to be discussed at the all-day meeting, April 12, will include pornography and drug abuse. The sessions are open to all physicians and interested ancillary personnel, with no charge. Dr. Peter A. Santucci, of Bethesda, Md., is President of the Guild.

The 171st Annual Meeting of the Medical and Chirurgical Faculty of Maryland is scheduled for April 9, 10 and 11 at The Alcazar in Baltimore. There is no registration fee, and credit for attendance will be given by the Academy of General Practice.

Dr. Milton Helpern, Chief Medical Examiner of New York City, will be the first speaker, April 9, at 1:30 p.m. There will be guest speakers from the University of Pennsylvania, Johns Hopkins University, and the University of Maryland. Dr. Denton A. Cooley, of Baylor University, will talk on cardiac transplantation at 4:15 p.m., April 10.

A reception and Presidential Banquet will be held at the Belvedere Hotel on Thursday evening, April 10. Guest speaker will be Dr. Burtis E. Montgomery, Chairman of the AMA Board of Trustees.

A detailed program may be secured by writing to Dr. Joseph D. B. King, Chairman, Committee on Program and Arrangements, Medical and Chirurgical Faculty, 1211 Cathedral Street, Baltimore, Md. 21201.

GENERAL NEWS

Dr. Samuel C. Southard writes that he has taken a year's leave of absence from his private practice in New Jersey to serve with a fact-finding agency of government known as the **National Commission on Product Safety.** The Commission, with offices at 1016 16th Street, N.W., was established by Congress to develop effective means to protect Americans from unreasonable hazards related to many products commonly used in and around the home today. Dr. Southard, Director of Task Force I, plans to contact "front line" physicians by means of a questionnaire which was mailed to them during the month of March. The questionnaire will seek to elicit information on all product-related injuries treated during the first 2 weeks in April. Dr. Southard hopes for the wholehearted coöperation of the medical profession for information that only physicians can make available to this Commission.

The hospital ship *S. S. Hope* has been accredited by the Joint Commission on Accreditation of Hospitals. In a letter announcing certification the Commission commended Project HOPE for "maintaining standards deserving of accreditation and for your constant effort to improve the quality of patient care."

Officers serving the **Washington Chapter of the American Academy of General Practice** this year are:

Dr. Thomas F. Cullen, *President;* Dr. Edward Richards, *President-elect;* Dr. Walter F. Cresswell, Jr., *Vice President;* Dr. R. Stephen Hulbert, *Secretary;* and Dr. Harry Sacks, *Treasurer.*

Georgetown University School of Medicine has received a grant of $397,985 from the John A. Hartford Foundation, Inc., New York, to study the possibility of transplanting the hearts of animals into human beings. The principal investigator is Dr. Charles A. Hufnagel, Chairman of the Department of Surgery at Georgetown.

George Washington University Medical Center has recently received 2 large sums for eye research. A grant of $52,493 from The Seeing Eye, Inc. will assist in establishing a research center in the Department of Ophthalmology. It will enable the Department, under its Chairman and principal investigator, Dr. John W. McTigue, to expand general ophthalmic research and electron microscopy studies.

The second gift, an unrestricted grant of $5,000 from Research to Prevent Blindness, Inc. will enable the Department to pursue new concepts in eye research.

From **Children's Hospital** comes the announcement that Dr. Felix P. Heald has been appointed Pediatrician-in-Chief, succeeding Dr. Donald W. Delaney, who has been promoted to Associate Director of Children's Hospital for Patient Care. Dr. Heald is Professor and Chairman of the Department of Pediatrics at George Washington University School of Medicine, which has a teaching affiliation with Children's Hospital.

Dr. John F. Potter, administrator of the **Cancer Research Fund of Georgetown University Hospital,** received a check of $250 from Mrs. Lora Waters, of Seattle, Washington, National President of the Ladies Auxiliary to the Veterans of Foreign Wars.

Doctors Hospital has received an EKG Machine (Sanborn Model 500) from the estate of J. Burton Glenn, M.D., who was on the staff of its Department of Internal Medicine for many years. With a commemorative plaque it will become part of the permanent equipment of the Coronary Care Unit.

PERSONALS

Dr. Frank S. Ashburn has been elected to the Board of Governors of the American College of Surgeons, representing the District of Columbia.

Dr. Marvin M. Gibson spent the month of November 1968 as an orthopedic volunteer with CARE-MEDICO at the Avicenna Hospital in

Kabul, Afghanistan. En route home via the Far East he spent several days working at Cho Ray Hospital in Saigon, Vietnam. The orthopedic staff at Cho Ray has been trained almost entirely by visiting orthopedic MEDICO specialists. The staff members are providing excellent service, he said, and wished to be remembered to physicians of the Washington area who have had tours of duty at Cho Ray.

Dr. James Spencer Dryden was elected President-elect for 1969 of the American Association of Ophthalmology at the annual meeting of the House of Delegates in Chicago, October 27, 1968.

Dr. Lewis H. Kurtz has been appointed Chief Medical Officer in the Department of Surgery of the Howard University Service at D. C. General Hospital. He succeeds Dr. Mitchell W. Spellman, who left January 23 for Los Angeles where he has accepted the post of Dean of the Charles R. Drew Postgraduate Medical School of the Center for Health Sciences, University of California at Los Angeles.

Dr. Spellman and Dr. Kurtz are both graduates of Howard University College of Medicine. Dr. Spellman was a Fellow in Surgery at the University of Minnesota from 1951 to 1954 and received his Ph.D. degree from the University of Minnesota Graduate School. He has been on the teaching staff of Howard University as Professor of Surgery. Dr. Kurtz is on the teaching staff of Howard as Assistant Professor of Surgery.

Dr. William M. Trible was elected Chairman of the Section on Otolaryngology of the Southern Medical Association in January. Dr. Trible, with other officers of the Section, will be responsible for arranging the program of the Section on Otolaryngology to be presented at the 63rd Annual Meeting of SMA in Atlanta, Ga., November 10-13, 1969.

Dr. Leon Gerber has been appointed General Chairman of the 1969 United Jewish Appeal for the Washington area.

Dr. Yuill Black took office in January as President of the Forest Villa-Brookhaven Civic Association for 1969.

OBITUARIES

William Tignor Gill, Jr., M.D.

(1892–1969)

Dr. William T. Gill, Jr., Washington cardiologist who had practiced medicine in Washington since 1920, died, January 29, 1969 at his home, 4000 Massachusetts Avenue, N.W. His father, Dr. William T. Gill, who died in 1941, had practiced medicine in Washington for 55 years.

Dr. Gill, a native Washingtonian, was born, October 26, 1892. He attended the public schools in Washington and graduated from old Central High School. He received his medical degree from George Washington University in 1917 and interned at Garfield Memorial Hospital.

During the World War I years, 1917-1918, he was commissioned in the U. S. Naval Medical Corps and received further training at the U. S. Naval Medical School in Washington. He served as surgeon aboard the *U.S.S. Olympia*, hunting submarines in the North Atlantic. Transferring to the Marines, he served with the Second Army Division as battalion surgeon in France in 1918. Following the War he was with the Army of Occupation in Germany. For his services he received 2 Distinguished Service Crosses, the Croix de Guerre with Palm, the Purple Heart, and other medals.

During World War II he served as medical examining officer at Ft. Myer, Va.

In 1920 he returned to Garfield Hospital as resident physician. Beginning in 1932 he turned to the field of cardiology, studying abroad for a year at the University of Vienna, and at various times he took courses at Harvard University, Northwestern University, the University of Michigan, the University of Chicago, and Columbia University.

He was consultant in internal medicine to old Episcopal Eye, Ear and Throat Hospital for more than 25 years and associate in cardiology at Garfield Hospital until 1952. He was consultant in cardiology and Head of the Department of Cardiology at Doctors Hospital for many years, later a member of its Emeritus Staff. He was on the courtesy staffs of most of the Washington area hospitals.

Dr. Gill was elected to Associate membership in the Medical Society of the District of Columbia in 1920, to Active membership in 1921, and became a

Life member in 1961. He was a member of the American Medical Association, a Fellow of the American College of Cardiology, and a member of the American Heart Association, the Washington Heart Association, the D. C. Society of Internal Medicine, the George Washington University Medical Alumni Association, the Pan American Medical Society, and many veterans', fraternal and social groups.

There are no immediate survivors. His wife, Mrs. Anita K. Gill, died in 1963. He had recently moved his offices from 1746 K Street, N.W. to 1835 Eye Street.

William Dandridge Terrell, Jr., M.D.

(1908–1969)

Dr. William D. Terrell, Jr., obstetrician and gynecologist, died, January 13, 1969, at his residence, 5082 Lowell Street, N.W.

Dr. Terrell was born in New York City, June 26, 1908. He attended the public schools in Washington, D. C. and graduated from Western High School. He received his medical degree from George Washington University in 1934 and interned at the University Hospital the following year. After a year of residency training at the same hospital he served as assistant to the late Dr. Howard F. Kane, Professor of Obstetrics and Gynecology at George Washington, in 1936–1937 and again in 1939–1940. Dr. Terrell trained also in his field at the Obstetrics Maternity Hospital in Cleveland and the University Hospitals of Cleveland.

Dr. Terrell practiced his specialty in offices in Washington at 1726 Eye Street, N.W. and in Arlington, Va. at 13th and North Hudson Streets. He was formerly Chief of Staff in Obstetrics at Garfield Memorial Hospital, and after Garfield merged into the Washington Hospital Center, he was Chairman of Obstetrics and Gynecology at the Center. He was on the courtesy staff of Arlington Hospital and most of the Washington hospitals.

He was a diplomate of the American Board of Obstetrics and Gynecology, an Active member of the Medical Society of the District of Columbia since 1940, a member of the American Medical Association, the Arlington County Medical Society, the Washington Gynecological Society, the Washington Clinical Club, and many social clubs.

He leaves his wife, Mrs. Margaret Wells Terrell, and 2 daughters, Mrs. Nancy Elsas, of New Haven, Conn., and Mrs. Dandridge Pencik, of Lexington, Va. His mother, Mrs. Estelle Terrell, of Caroline County, Va., also survives him.

Ralph Gregory Beachley, M.D.

(1895–1969)

Dr. Ralph G. Beachley, long-time Director of Public Health for Arlington County, Va., died, January 25, 1969 at his home, 4114 North 4th Street, Arlington, after a short illness.

Dr. Beachley was born in Hagerstown, Md., August 12, 1895. He attended Mercersburg Academy in Mercersburg, Pa. and Johns Hopkins University in Baltimore before enrolling for medical study at George Washington University. He received his degree in 1920. He earned the degree, Doctor of Public Health, in 1926 from the University of Georgia.

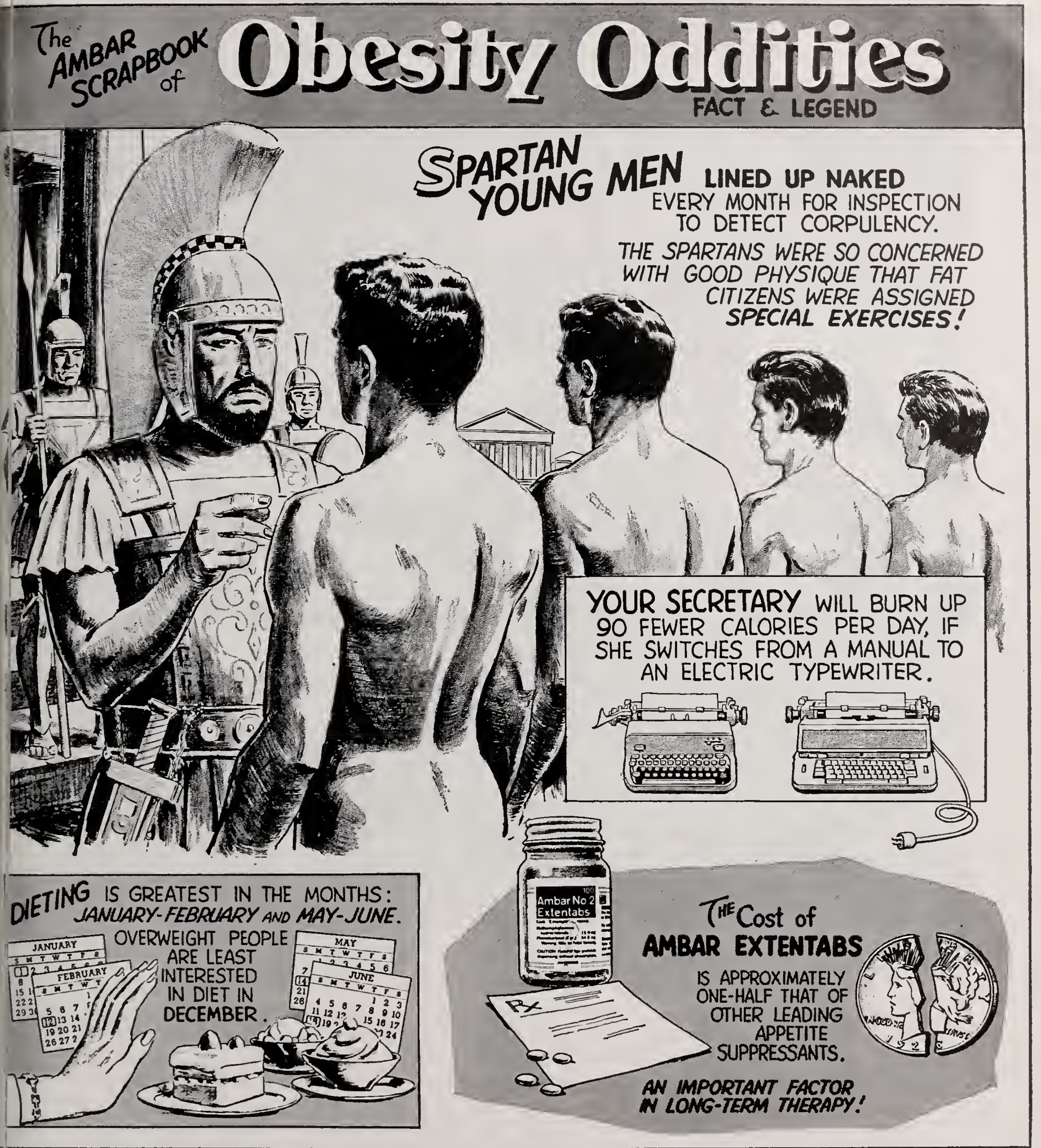
Commissioned in the U. S. Public Health Service in 1921, he began a public health career which was to span a period of 45 years. He was employed by the South Carolina Board of Health from 1923 to 1926. From 1926 to 1936 he was Deputy State Health Officer in Maryland. His service as Health Director of Arlington County covered the period from 1938 until his retirement in July 1965.

An Army veteran of World War I, he rose to the rank of Captain in the Medical Reserve Corps.

He was on the teaching staff of George Washington University School of Medicine as Adjunct Professor of Public Health Practice from 1939 until he retired, and at the time of his death he was Emeritus Professor at George Washington.

Dr. Beachley was elected to Associate membership in the Medical Society of the District of Columbia in 1942. He was a member of the American Medical Association, the American Public Health Association, the Southern Medical Association, the Virginia State Medical Society, and the Arlington County Medical Society. He was certified by the American Board of Preventive Medicine and Public Health. He was a Fellow of the Royal Society of Health in London, Past President of the Metropolitan Health Officers' Association, and formerly Secretary of the George Washington University Medical Alumni Association. Other organizations to which he belonged included the Arlington Rotary Club, the Cosmos Club of Washington, the Maryland Historical Society, and Sons of the American Revolution.

He leaves his wife, Mrs. Carolyn Bates Beachley; a daughter, Mrs. Roy Collins, of Arlington, Va.; a sister, Miss Catherine Beachley, and a brother, Dr. Jack H. Beachley, both of Hagerstown, Md.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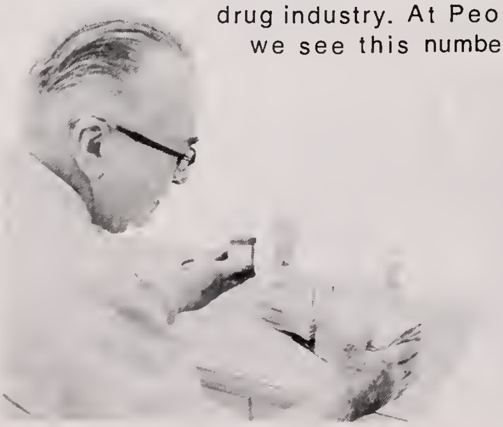

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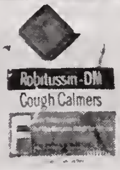

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March 27–29: Southern Society of Anesthesiologists. Marriott Motor Hotel, Atlanta, Ga. Address: Dr. Richard G. Zepernick, Mercy Hospital, New Orleans, La. 70119.

March 28–29: Third National Congress on the Socio-Economics of Health Care, sponsored by the AMA Council on Medical Service and Division of Health Service. Palmer House, Chicago. Address: Mr. J. E. Gartland, Secretary, AMA Council on Medical Service, 535 North Dearborn Street, Chicago, Ill. 60610.

April 9–11: Medical & Chirurgical Faculty of the State of Maryland. The Alcazar, Baltimore. Address: Mr. John Sargeant, Executive Secretary, 1211 Cathedral Street, Baltimore, Md. 21201.

April 12–13: National Guild of Catholic Psychiatrists. Washington, D. C. Address: Dr. Peter A. Santucci, President, 4962 Hampden Lane, Bethesda, Md. 20014.

April 13–18: American Society for Experimental Pathology. Traymore Hotel, Atlantic City, N. J. Address: Dr. Ralph E. Knotti, Executive Officer, 9650 Rockville Pike, Bethesda, Md. 20014.

April 18–20: American Society of Internal Medicine. Palmer House, Chicago. Address: Mr. William R. Ramsey, Executive Director, Hearst Bldg., Third at Market, San Francisco, Calif. 94103.

April 20–25: American College of Physicians (50th Annual Session). Conrad Hilton Hotel, Chicago. Address: Dr. Edward C. Rosenow, Jr., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

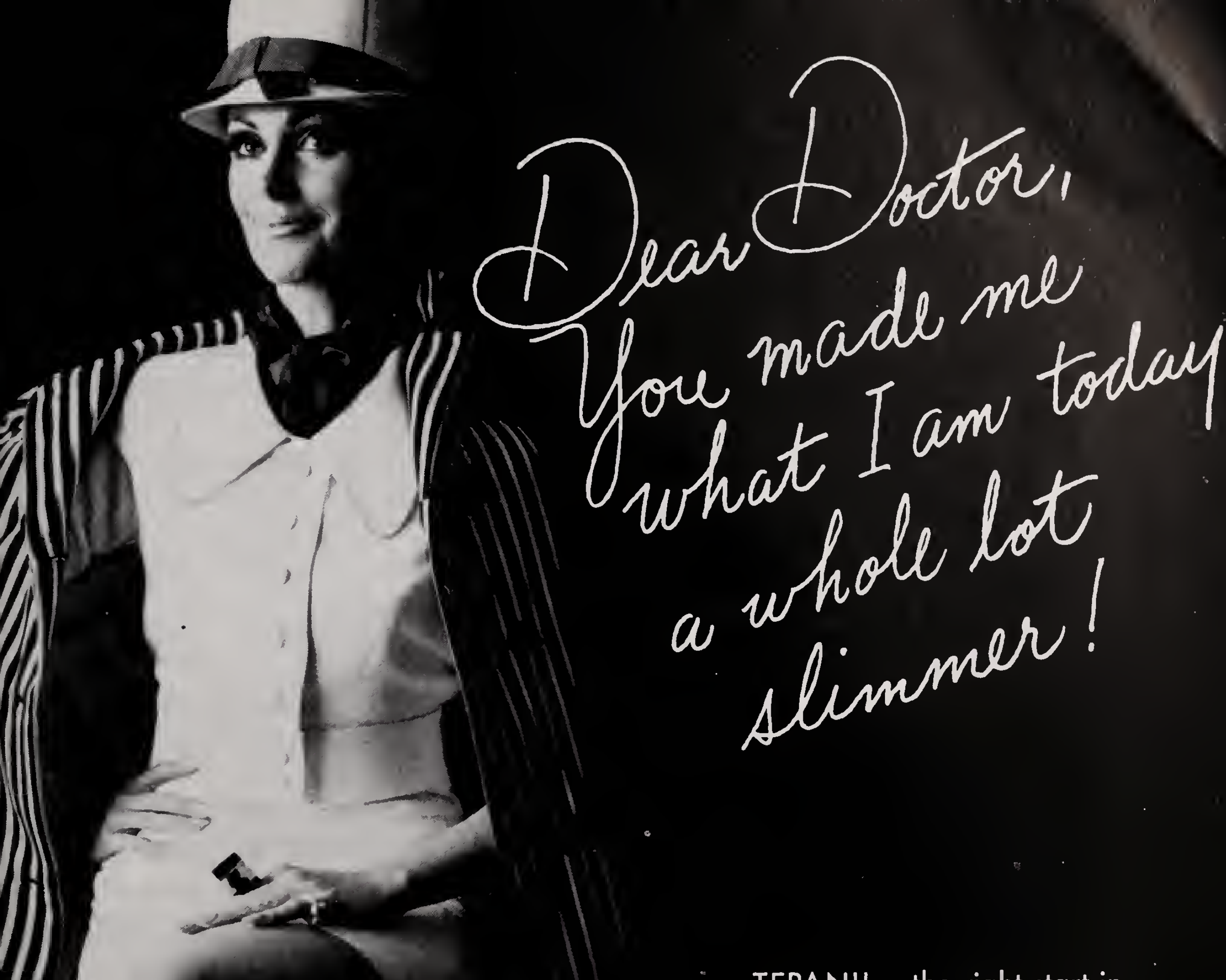
April 21–22: American Society for Artificial Internal Organs. Chalfonte-Haddon Hall, Atlantic City, N. J. Address: Dr. Eugene F. Bernstein, Secretary-Treasurer, Department of Surgery, University of Minnesota Medical School, Minneapolis, Minn. 55455.

April 21–26: American Academy of Neurology. Washington Hilton, Washington. Address: Mr. Stanley A. Nelson, Executive Director, 4005 West 65th Street, Minneapolis, Minn. 55435.

April 27–May 1: Southeastern Surgical Congress. Hotel Roosevelt, New Orleans. Address: Dr. A. H. Letton, Secretary-Director, 340 Boulevard, N.E., Atlanta, Ga. 30312.

April 28–29: Sixth Congress on Environmental Health Problems, sponsored by the AMA Department of Environmental Health. Drake Hotel, Chicago. Address: Mr. Frank W. Barton, Director, 535 North Dearborn Street, Chicago, Ill. 60610.

April 28–May 1: American College of Obstetricians and Gynecologists. Americana Hotel, Bal Harbour, Fla. Address: Dr. Michael Newton, Director, 79 West Monroe Street, Chicago, Ill. 60603.



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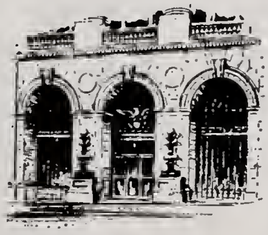

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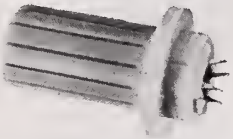

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* As recommended by the Local Medical Societies

Nose clear as a whistle
(THANKS TO DIMETAPP®)

Dimetapp Extentabs® does an outstanding job of helping to clear up the stuffiness, drip and congestion of colds and upper respiratory allergies and infections. Each Extentab keeps working up to 12 hours. And for most patients drowsiness or overstimulation is unlikely. Try Dimetapp. It clearly works.

FOR UPPER RESPIRATORY ALLERGIES AND INFECTIONS

Dimetapp Extentabs®

Dimetane® (brompheniramine maleate), 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.

UP TO 12 HOURS CLEAR BREATHING ON ONE TABLET

Indications: Dimetapp is indicated for symptomatic relief of the allergic manifestations of respiratory illnesses, such as the common cold and bronchial asthma, seasonal allergies, sinusitis, rhinitis, conjunctivitis, and otitis.
Contraindications: Hypersensitivity to antihistamines. Not recommended for use during pregnancy.
Precautions: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
Dosage: 1 Extentab morning and evening.
Supplied: Bottles of 100 and 500.

A.H. ROBINS COMPANY
RICHMOND, VA. 23220
A·H·ROBINS

ɔys

iunson, ssages in section Christ- hich is of the the rist- ballet at Vir- Mun- in the rg st Step- rina of nd et, nier

Hasn't the skipper had enough excitement for one day?

Owner Breaks Arm When Yacht Runs Agrou

Schuyler, Oct. 31. Harry Waters of Covesville incurred a fractured arm acht ck a large rock

tially capsized. The fire depa had to rescue Waters by sma Damage to the yacht is estim

For the patient who has been through an accident, the worry and anxiety following the mishap may actually heighten the perception of pain. This is why there's a classic ¼ grain *sedative* dose of phenobarbital in Phenaphen with Codeine—to take the nervous "edge" off, so the rest of the formula can control the pain more effectively.

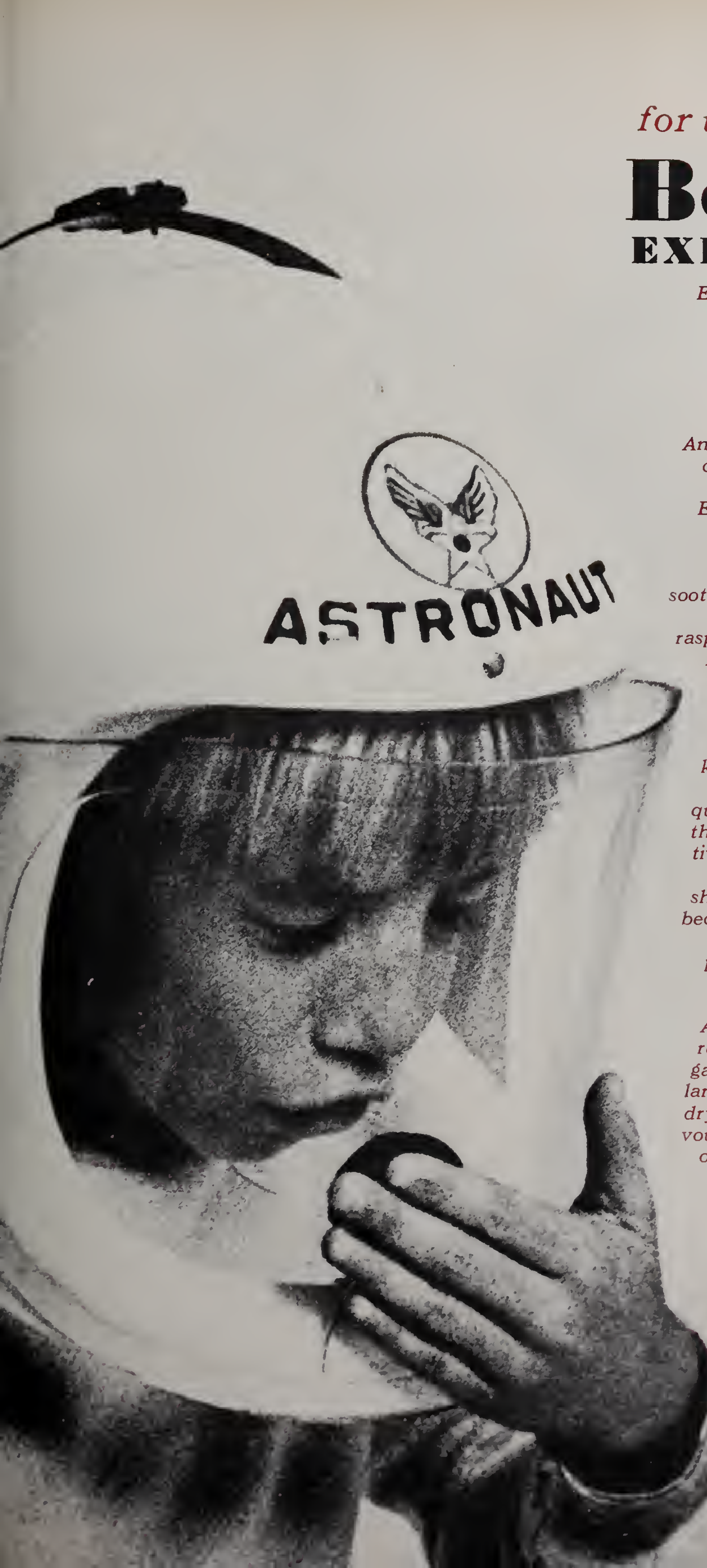
A. H. Robins Company,
Richmond, Va. 23220 A·H·ROBINS

Phenaphen® with Codeine

Phenaphen with Codeine Nos. 2, 3, or 4 contains: Phenobarbital (¼ gr.), 16.2 mg. (warning: may be habit forming); Aspirin (2½ gr.), 162.0 mg.; Phenacetin (3 gr.), 194.0 mg.; Hyoscyamine sulfate, 0.031 mg.; Codeine Phosphate, ¼ gr. (No. 2), ½ gr. (No. 3), or 1 gr. (No. 4) (warning: may be habit forming)

The compound analgesic that calms instead of caffeinates

Indications: Phenaphen with Codeine provides relief in severer grades o pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. **Contraindications:** Hypersensitivity to any of the components. **Precautions:** As with a phenacetin-containing products excessive or prolonged use should b avoided. **Side effects:** Side effects are uncommon, although nausea, constipation and drowsiness may occur. **Dosage:** Phenaphen No. 2 and No. 3—1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsul every 3 to 4 hours as needed. For further details see product literature.



heavenly relief for unearthly cough

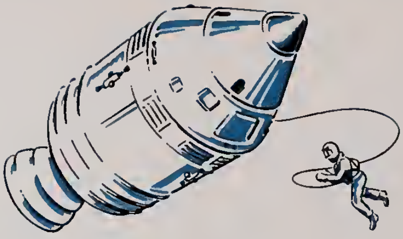
Benylin®
EXPECTORANT

Each fluidounce contains: 80 mg. Benadryl® (diphenhydramine hydrochloride, Parke-Davis); 12 grains ammonium chloride; 5 grains sodium citrate; 2 grains chloroform; 1/10 grain menthol; and 5% alcohol. An antitussive and expectorant for control of coughs due to colds or of allergic origin, BENYLIN EXPECTORANT is the leading cough preparation of its kind. BENYLIN EXPECTORANT tends to inhibit cough reflex... soothes irritated throat membranes. And its not-too-sweet, pleasant raspberry flavor makes BENYLIN EXPECTORANT easy to take. PRECAUTIONS: Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this preparation. Hypnotics, sedatives, or tranquilizers if used with BENYLIN EXPECTORANT should be prescribed with caution because of possible additive effect. Diphenhydramine has an atropine-like action which should be considered when prescribing BENYLIN EXPECTORANT. ADVERSE REACTIONS: Side reactions may affect the nervous, gastrointestinal, and cardiovascular systems. Drowsiness, dizziness, dryness of the mouth, nausea, nervousness, palpitation, and blurring of vision have been reported. Allergic reactions may occur. PACKAGING: Bottles of 4 oz., 16 oz., and 1 gal.

Parke, Davis & Company
Detroit, Michigan 48232

PARKE-DAVIS

410R69



Man in space, now fait accompli, re-emphasizes the importance of Uro-Phosphate therapy. Research into the effect of space travel on the astronaut reveals that weightlessness causes loss of bone calcium. As the bones are required to bear less and less of the weight of the body they lose calcium, increasing the calcium content of the urine. When physical activity is reduced, the acidity of the urine should be adjusted to keep increased calcium in solution . . . . a prophylaxis to prevent kidney or bladder calculi.

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NOW A SUGAR-COATED TABLET

Each tablet contains: METHENAMINE, 300 mg.; SODIUM ACID PHOSPHATE, 500 mg.

Uro-Phosphate gives comfort and protection when inactivity causes discomfort in the urinary function. It keeps calcium in solution, preventing calculi; it maintains clear, acid, sterile urine; it encourages complete voiding and lessens frequency when residual urine is present.

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Uro-Phosphate is safe for continuous use. There are no contra-indications other than acidosis. It can be given in sufficient amount to keep the urine clear, acid and sterile. A heavy sugar coating protects its potency.

Dosage:

For protection of the inactive patient 1 or 2 tablets every 4 to 6 hours is usually sufficient to keep the urine clear, acid and sterile.

2 tablets on retiring will keep residual urine acid and sterile, contributing to comfort and rest.

A clinical supply will be sent to physicians and hospitals on request.

WILLIAM P. POYTHRESS & COMPANY, INC., RICHMOND, VIRGINIA 23217

Manufacturers of Ethical Pharmaceuticals

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a cold, NTz® Nasal Spray provides rapid relief of
l symptoms. Relief starts with the first spray which
ns the inferior part of the common meatus. A second
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overdosage should be avoided.

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painful night
leg cramps...
respond to specific
therapy with
QUINAMM™
(Quinine sulfate, 260 mg.,
Aminophylline, 195 mg.)

THE BETTMAN ARCHIVE

Just one tablet at bedtime • Prevents painful night leg cramps • Permits restful sleep

How many of your patients stamp their feet at night and lose sleep because of painful leg cramps? Unless prompted, they usually fail to report this distressing condition and suffer needlessly.

One tablet of QUINAMM at bedtime usually controls distressing night cramps and permits restful sleep with the initial dose.

Prescribing information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications.** QUINAMM is contraindicated in pregnancy because of its quinine content. **Side Effects/Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

THE NATIONAL DRUG COMPANY
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Antrocol

Antrocol provides the prompt, predictable antisecr
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Each Antrocol tablet or capsule contains 0.324 mg.
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specified in U.S.P., Vol. 17. This slight increase in th
smallest effective dose of the antisecretory facto
(atropine) is all the average patient can tolera
without discomfort.

One Antrocol tablet or capsule taken three time
daily lessens emotional stress and maintains a gastri
function that is not conducive to the development
peptic ulcer.

Antrocol is also useful in the treatment of pepti
ulcer. Dosage up to 8 tablets or capsules per day
obtain the desired antisecretory titer. When ulcer h
healed, one Antrocol tablet or capsule morning an
evening gives protection against recurrence.

Each tablet or capsule contains:

Atropine Sulfate	0.324 mg.
Phenobarbital (may be habit forming) ..	16 mg.
Bensulfoid, see white section P.D.R. ...	65 mg.

Side-effects: Toxic levels of atropine may produce flushing, dry mouth, blurred vision, tachycardia, or urinary retention. Precautions: Do not use in glaucoma. Use cautiously in prostatic hypertrophy.

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WILLIAM P. POYTHRESS & CO., IN
RICHMOND, VIRGINIA 232
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Antrocol®

**ANTISECRETORY
SEDATIVE**

April
1969

VOLUME XXXVIII • NUMBER 4

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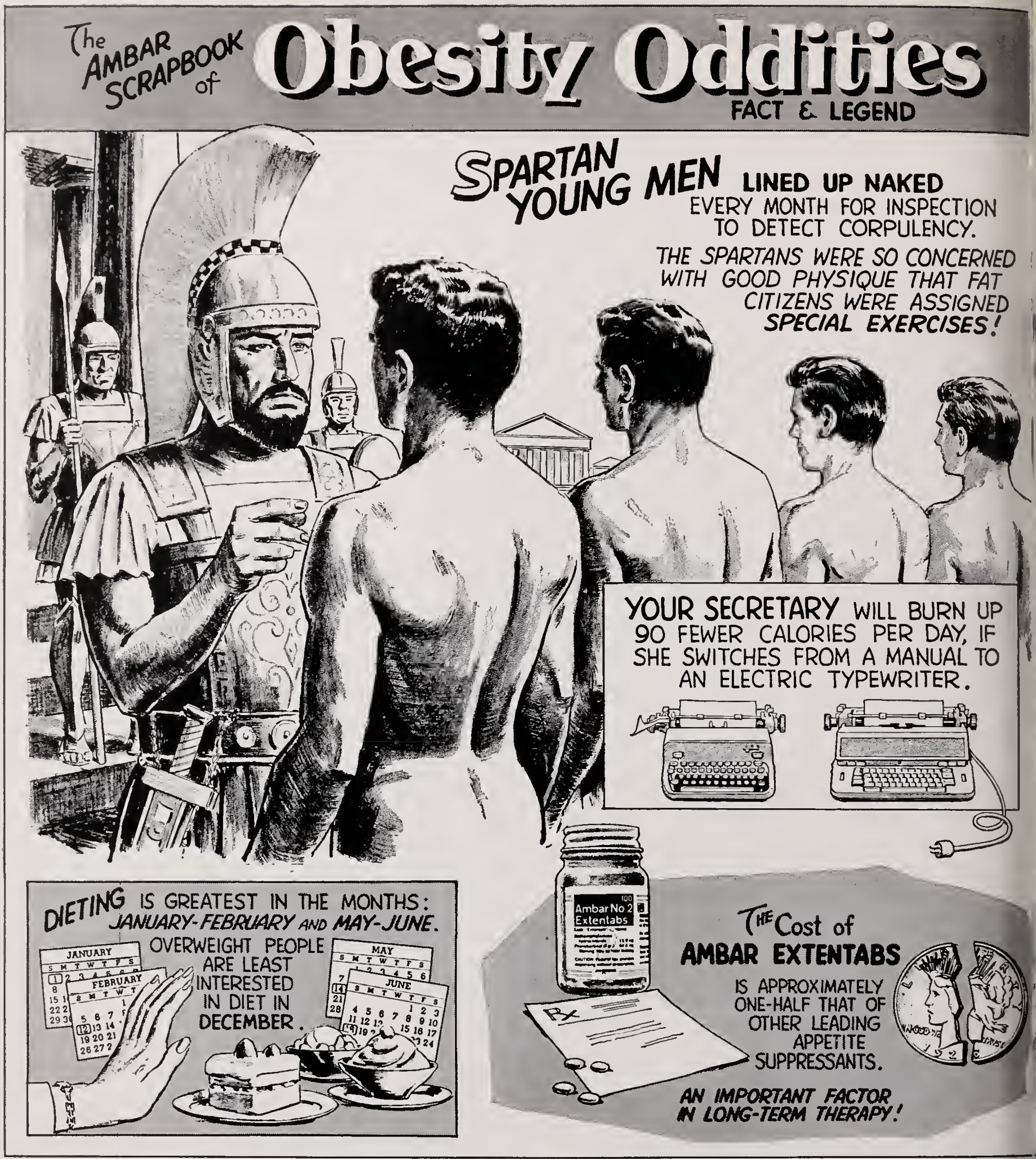
DISTRICT OF COLUMBIA
DEPARTMENT OF PUBLIC HEALTH
NUMBER

MEDICAL ANNALS
of the District of Columbia

THE MEDICAL SOCIETY
of the
DISTRICT OF COLUMBIA


The AMBAR SCRAPBOOK of
Obesity Oddities
FACT & LEGEND
SPARTAN YOUNG MEN LINED UP NAKED EVERY MONTH FOR INSPECTION TO DETECT CORPULENCY.
THE SPARTANS WERE SO CONCERNED WITH GOOD PHYSIQUE THAT FAT CITIZENS WERE ASSIGNED SPECIAL EXERCISES!
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AN IMPORTANT FACTOR IN LONG-TERM THERAPY!

CONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DO

AMBAR #2 EXTENTABS®

methamphetamine HCl 15 mg.,
phenobarbital 64.8 mg. (1 gr.)
(Warning: may be habit forming).

One Ambar Extentab before breakfast can help control most patients' appetite for up to 12 hours. Methamphetamine, the appetite suppressant, gently elevates mood and helps overcome dieting frustrations. Phenobarbital, the sedative in Ambar, controls irritability and anxiety... helps maintain a state of mental calm and equanimity. Both work together to ease the tensions that erode the willpower during periods of dieting.

Also available: Ambar #1 Extentabs®—methamphetamine hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

BRIEF SUMMARY/**Indications:** Amb
suppresses appetite and helps offset em
tional reactions to dieting. **Contraindic**
tions: Hypersensitivity to barbiturates
sympathomimetics; patients with advanc
renal or hepatic disease. **Precautions:** Administer with ca
tion in the presence of cardiovascular disease or hypertensi
Side Effects: Nervousness or excitement occasionally not
but usually infrequent at recommended dosages. Slight drow
iness has been reported rarely. See package insert for furt
details.

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RICHMOND, VA. 23220

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(50 mg. per ml.)

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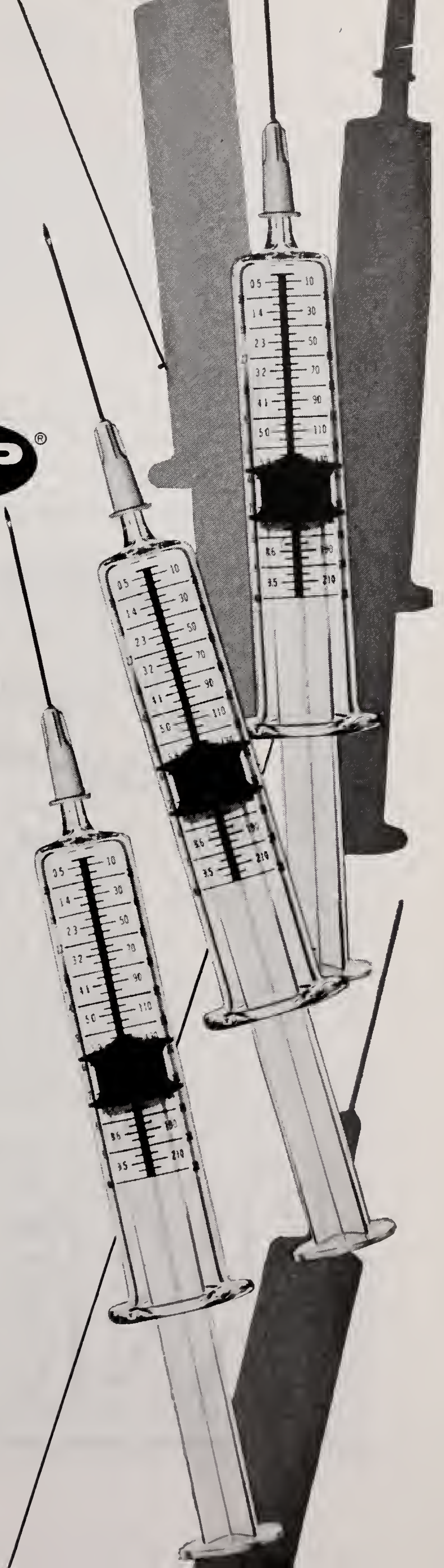

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-UNIT.

BSP, one of the more valuable single laboratory procedures for determining hepatic function, is now packaged in a complete individual patient-unit.

The BSP Disposable Unit contains a sterile syringe with the dosage schedule imprinted on the barrel, a sterile needle, alcohol swab and a 7.5 ml. or 10 ml. size ampule of terminally sterilized BSP solution. Each unit contains complete directions for use, precautions and contraindications.

This all-inclusive disposable put-up lessens the chance of cross-infection and saves time and labor — the most costly commodities.

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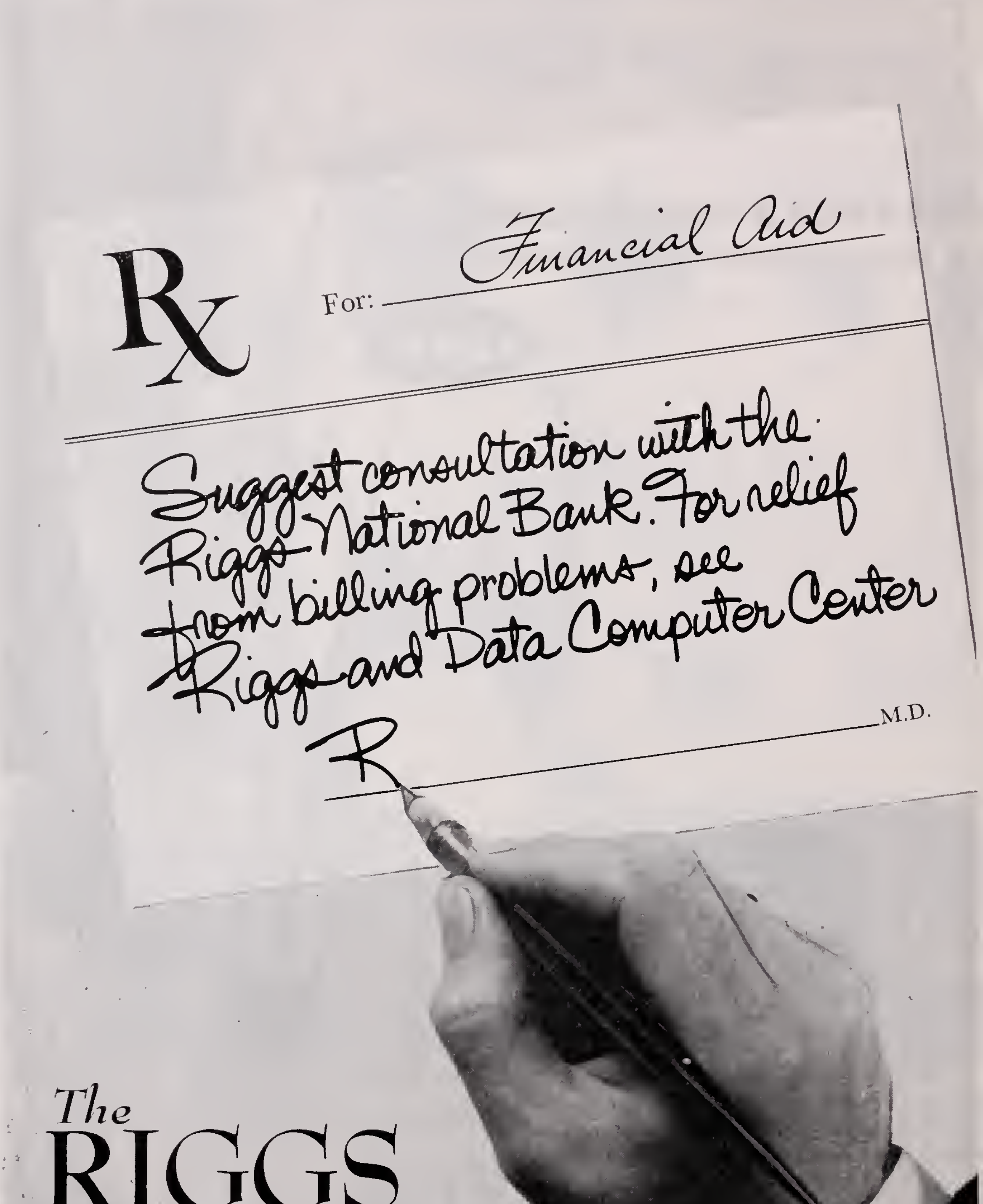
BALTIMORE, MARYLAND 21201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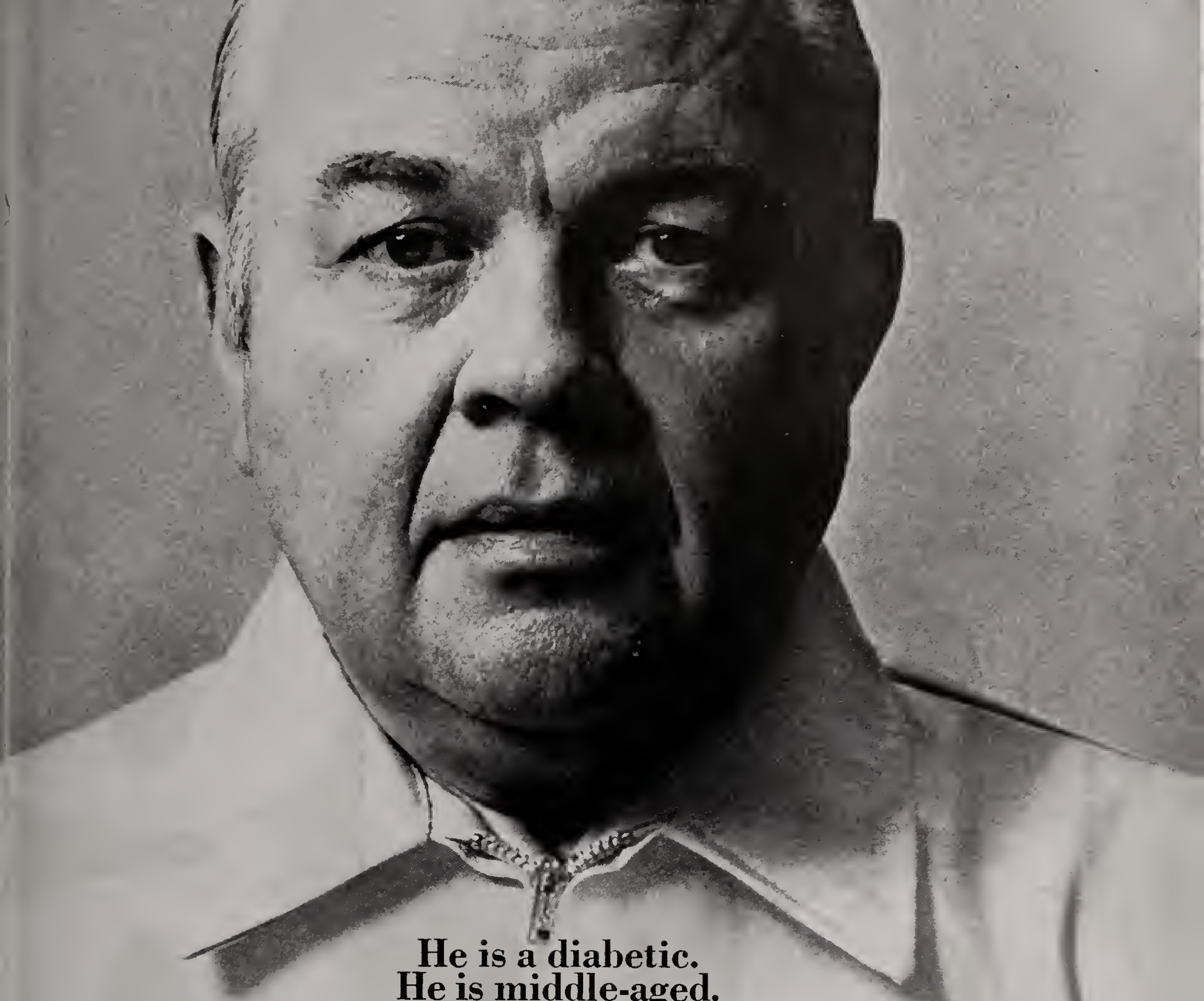

He is a diabetic.
He is middle-aged.
When he needs an antibiotic
he may be a candidate for

DECLOSTATIN® 300

Demethylchlortetracycline HCl 300 mg
and Nystatin 500,000 units
CAPSULE-SHAPED TABLETS Lederle

b.i.d.

uard susceptible patients against intestinal monilial over-
th during broad-spectrum therapy—the protection of
atin is combined with demethylchlortetracycline in
LOSTATIN.

r your susceptible candidates, prescribe DECLOSTATIN
e broad-spectrum therapy that prevents monilial
growth.

tiveness: Because its antibacterial component is DECLOMYCIN
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cycline-sensitive organisms. The antifungal component, Nystatin,
cts against superinfection by antibiotic-resistant fungal overgrowth
ticularly monilia) in the intestinal tract.

raindication: History of hypersensitivity to demethylchlortetracy-
or nystatin.

ing: In renal impairment, usual doses may lead to excessive accum-
on and liver toxicity. Under such conditions, lower than usual doses
ndicated, and, if therapy is prolonged, serum level determinations
be advisable. A photodynamic reaction to natural or artificial sun-
has been observed. Small amounts of drug and short exposure may
uce an exaggerated sunburn reaction which may range from ery-
a to severe skin manifestations. In a smaller proportion, photo-
gic reactions have been reported. Patients should avoid direct
sure to sunlight and discontinue drug at the first evidence of skin
mfort. Necessary subsequent courses of treatment with tetracy-
s should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Lederle

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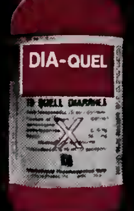
no gag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DIA-QUEL actually tastes good

DIA-quel contains the only therapeutically active ingredient of paregoric—tincture of opium. This has been combined with homatropine methylbromide and pectin to make a sensible antidiarrheal formula.

By leaving out paregoric's outdated preservative—bitter-tasting camphor—we've produced an antidiarrheal that is good-tasting, as well as effective and prompt-acting in acute, nonspecific diarrheas and their accompanying "cramps." It is DIA-quel, a clear, red liquid with a pleasant cherry flavor.

Each teaspoonful (5 ml.) of DIA-quel Liquid contains:

Tincture of Opium... 0.03 ml.—Equivalent to 0.75 ml. of paregoric.
(Warning: May be habit forming)

To reduce hypermotility and frequency.

Homatropine Methylbromide... 0.15 mg.

A safe dose for mild spasmolysis to curb cramping and griping.

Pectin... 24. mg.

Demulcent, adsorbent. Helps form stools.

Alcohol 10% by volume.

case you're curious, back in the 1700's paregoric was
ing used for diarrhea, but since the state of the pharma-
utical art was extremely primitive, fungus growth in
e medication was a problem. Bitter-tasting camphor
as added to prevent such growth and anise oil was
lded in an attempt to cover up the camphor taste.
IA-quel Liquid is a modern formulation that does not
ntain either of these outdated ingredients.

aution: With use of DIA-quel Liquid observe the usual
ecautions associated with opium derivatives and anti-
olinergics.

osage: Usual adult dosage: 1 or 2 tablespoonfuls (15
30 ml.) t.i.d. or q.i.d. Usual children's dosage (Clark's
le): ½ to 2 teaspoonfuls (2.5 to 10 ml.) t.i.d. or q.i.d.

ow Supplied: In 4 fl. oz. (118 ml.) band-sealed bottles.

DIA-quel is a Federally exempt narcotic (Class X) preparation. Where state law permits, no prescription is necessary.

For a complimentary sample of DIA-quel, simply mail your request to us on a signed prescription blank.

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This penicillin produces high, fast levels—orally.

Pen•Vee® K is usually so rapidly and completely absorbed that therapeutic penicillin levels are attained within 15 to 30 minutes. Thus it can often obviate the need for penicillin injections. The higher serum levels produced generally last longer than with those of oral penicillin G.

Indications: Infections susceptible to oral penicillin G: prophylaxis and treatment of streptococcal infections; treatment of pneumococcal, gonococcal, and susceptible staphylococcal infections; prophylaxis of rheumatic fever in patients with a previous history of the disease.
Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.
Warnings: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia. In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.
Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.
Adverse Reactions: (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").
Composition: Tablets—125 mg. (200,000 units), 250 mg. (400,000 units), 500 mg. (800,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

Wyeth Laboratories Philadelphia, Pa.

ORAL PEN•VEE® K

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ixed anxiety-depression

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llaril is now also known to be effective
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ten the symptoms of anxiety states are
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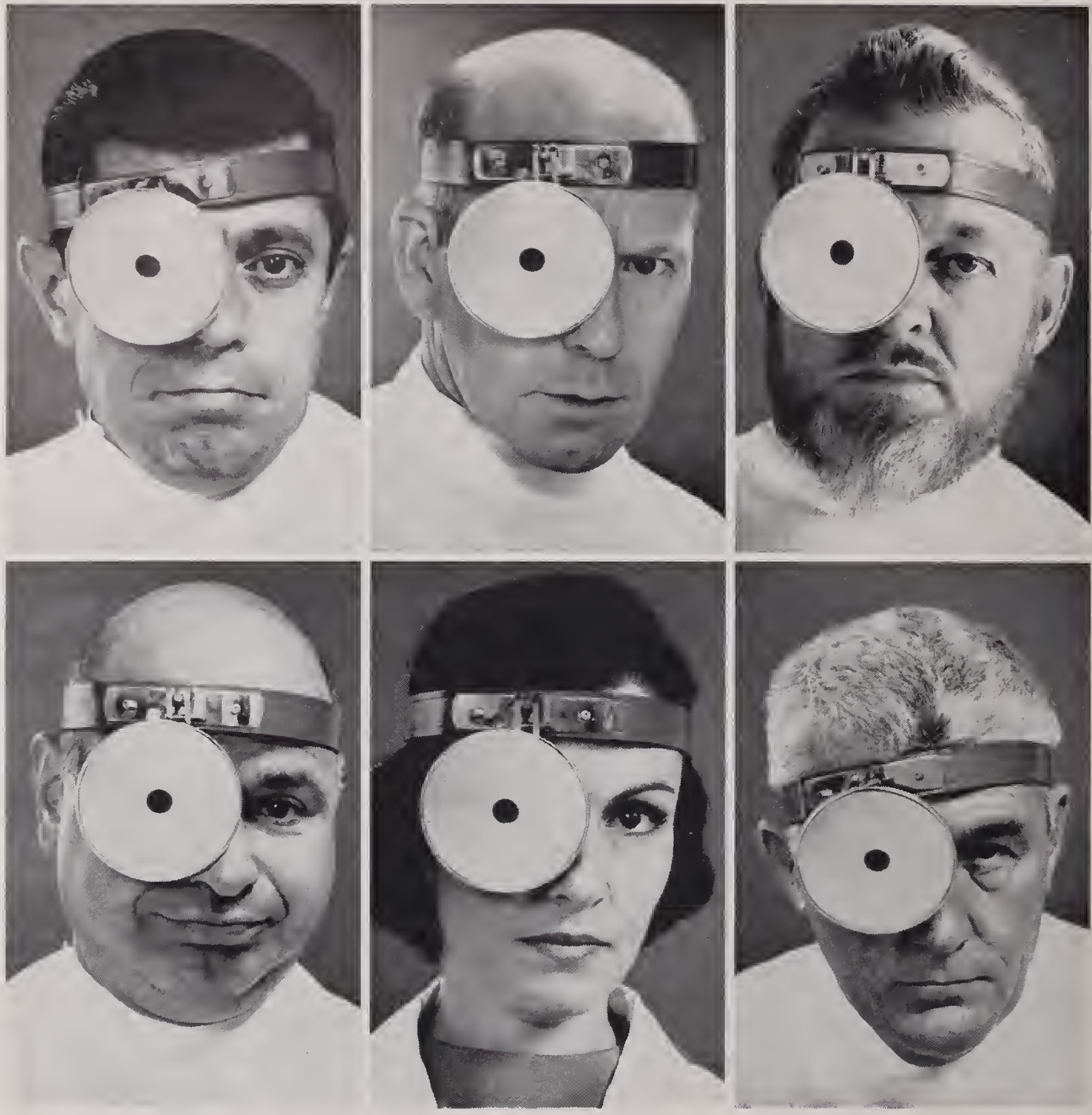

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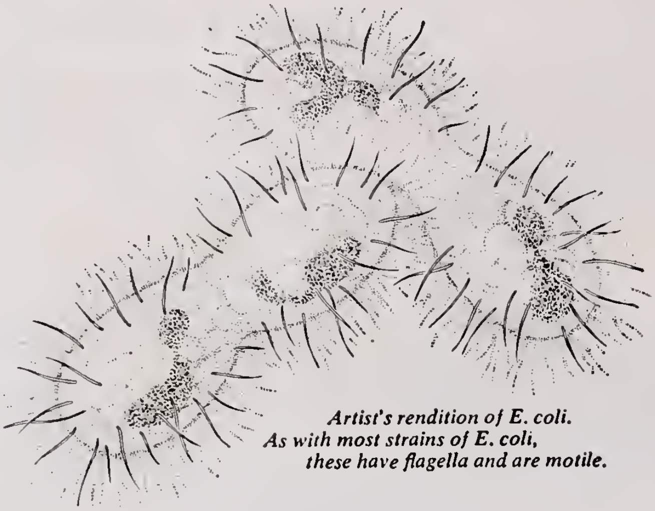

Artist's rendition of E. coli. As with most strains of E. coli, these have flagella and are motile.

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mfort but to prevent chron-
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Book Reviews

The Country Doctor and the Specialist. Fred Lyman Adair, M.D. Paper. Pp. 215. Maitland, Fla.: Adair Award Fund, 1968.

Dr. Fred Lyman Adair, as well as many others during his time and his father before him, was a pioneer in the science and practice of medicine. In this autobiography Dr. Adair relates incidents in the lives of a father and son, one a general practitioner in Iowa and the other a specialist in prenatal care, obstetrics and gynecology.

The recorded history of these 2 physicians depicted in the little vignettes of early American medicine of the Midwest might be quite interesting to the "newer" physicians of today. Too often today's physicians are prone to take such history with "a grain of salt," not fully realizing that the present in which they practice was made possible only by the efforts of the thousands of dedicated pioneers of the past.

Dr. Fred Lyman Adair, a world-renowned specialist, greatly respected the hard work done by his father, "a country doctor and general practitioner." In reading this volume I got the feeling that this great respect for his father as a man and as a physician, working hard in a young and vigorous country, helped to make Dr. Fred the man, the scientist, and the great physician he came to be.

I recommend this book to our present-day physicians. Perhaps in its pages they may come to understand why the need for the general physician—the physician for the family—is just as great today as it was in the early days of both Dr. Fred L. Adair and his father.

I. Phillips Frohman, M.D.

Synopsis of Pathology, 7th ed. W. A. D. Anderson, M.A., M.D., F.A.C.P., and Thomas M. Scotti, A.B., M.D. Price, $10.50. Pp. 957, with 408 illustrations and 3 color plates. St. Louis: Mosby, 1968.

This new seventh edition of the long popular "Synopsis of Pathology" offers for active physicians in all fields of medicine, as well as students of the medical sciences, a remarkably handy and comprehensive review or reference book. Each disease process is carefully and clearly defined as to its specific nature and significance, and the underlying physiologic mechanisms are very well described.

Despite the great number of pages, the book is a convenient size, with good quality paper and very legible print. The major headings and subheadings are carefully arranged in a logical, easy-to-follow, and consistent pattern. The writing style is refreshingly concise and lucid and is unusually free from careless typographical errors.

Through careful editing only 71 pages have been added despite the quantity of significant new data that has been inserted. Of special note are a new chapter on "the cell" and additional discussion of "radiation injury," "hyaline degeneration," "auto-immunity," "organ transplants and host rejection" phenomena, "inflammation," and "atherosclerosis."

Although the book provides a quick reference and review text, it is not particularly designed for fulltime specialists in pathology. It does not include much mention of clinical laboratory findings.

Dr. Anderson, the senior author through all 7 editions, brings together an exceptional combination of widely respected authority in the field with a gift for brevity and clear expression. It is somewhat unfortunate that the illustrations are not of comparable uniform excellence. Many of the pictures are too small, ill-shaped for a maximal use of available space, and show a poor selection of magnification with frequent blotting out of the fine details by too much heavy black ink. Furthermore, picture subtitles do not helpfully point out the significant features which each picture has been selected to demonstrate. The few colored illustrations used are too artificial in appearance to be worth including.

A brief, well-organized and tabulated listing of important relevant clinical laboratory findings, plus a list of the normal values for comparison, would have been a valuable inclusion in this reference book. The text deserves better pictures, but this shortcoming does not noticeably detract from its overall excellence and usefulness, and it is certainly a good buy for the money.

Charles G. Bratenahl, M.D.

Bray's Clinical Laboratory Methods, 7th ed. Revised by John D. Bauer, M.D., Philip G. Ackermann, Ph.D., and Gelson Toro, Ph.D. Price, $14.85. Pp. 764, with 174 illustrations and 16 color plates. St. Louis: Mosby, 1968.

The new edition of "Bray's Clinical Laboratory Methods," completed by John D. Bauer, M.D., Philip G. Ackermann, Ph.D., and Gelson Toro, Ph.D., is considerably improved over previous editions. The former 2 are associated with DePaul Hospital in St. Louis, and Dr. Toro is associated with the Reproductive Biology Research Foundation in St. Louis.

(Continued on page 18)

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Book Reviews

(*Continued from page 16*)

This is the seventh edition of Bray's original volume. It conforms to the same general format which was used in the original edition. The contents encompass the scope of the clinical pathology laboratory and include complete revision of the sections on microbiology and clinical chemistry. The size of the volume has not increased, however, due to elimination of outdated material and substitution of more recent information.

The section on quality control is quite satisfactory, although brief, and constitutes a contribution in this dimension. Individual chapters associated with the description of techniques and procedures together with background information on the clinical physiology provide the reader with a better understanding of clinical chemistry, hematology, blood banking, parasitology, and tissue examination.

One portion of the section on clinical chemistry develops a discussion of colorimetry and spectrophotometry and offers some assistance in methods of evaluating instrumentation. There are also further elucidations on photofluorometry, electrophoresis, and chromatography including paper, thin-layer, and gas chromatography. There is additional information on automated procedures and automated machinery.

The area of enzyme procedures has been greatly augmented and improved. Alternate procedures are described for many of the new enzymes, and comparative techniques are evaluated.

One deficiency of the volume is the lack of any useful information on radioisotope examinations, which are a fundamental tool of today's clinical pathology laboratory.

The hematology section has a very good discussion of new methods in the reëvaluation of red cell activity and red cell enzymes. Hemoglobin electrophoresis is also well presented. The treatment of blood banking is an adequate condensation of this body of information but is not outstanding.

The new chapter on microbiology contains a considerable amount of information about newer media for the *Neisseria*, the *Mima*, and the *Herellea*. There are also discussions on L-shaped organisms and microplasma. Several tables treating these areas are quite helpful in the differentiation of the organisms.

In general, this volume constitutes a succinct reference for the clinical pathologist. It would be a reference aid too to the internist, the pediatrician, and the general practitioner in approaching the diagnostic problem. From this point of view the volume is satisfactory and helpful.

OSCAR B. HUNTER, JR., M.D.

Orthoptics: Theory and Practice. HANS G. BREDEMEYER, M.D., AND KATHLEEN BULLOCK, D.B.O.(T.). Price, $13.75. Pp. 284, with 134 figures. Original art work by Sallie Gloeckner, M.A. St. Louis: Mosby, 1968.

This is a basic instructional text in ocular motility intended primarily for the student of orthoptics. Its simplified approach will also furnish the new resident in ophthalmology an introduction to the complex field of the etiology, diagnosis and treatment of abnormalities of binocular vision.

The first section deals with basic ocular anatomy and visual functions, and then the development, physiology and sensory aspects of normal binocular vision. Different methods of classification and examination are presented in the second section as well as optics, instrumentation, and the role of drugs in therapy. The entire third section examines specific sensory anomalies from the standpoint of etiology and treatment and the coördination required between the ophthalmologist and orthoptist.

Some confusion is created when the authors use terms which, though technically accurate, are not in common usage or generally understood. Their substitution of the "angle lambda" for the commonly used "angle kappa" might be more easily accepted if a simple explanation and clarification were offered, and the use of "negative fusional convergence" rather than simply "fusional divergence" continues to clutter the terminology of strabismus.

In general, those interested in a basic introductory text in ocular motility for the orthoptist or a text in orthoptics for the young ophthalmologist will find that this book well serves both purposes.

JOHN F. O'NEILL, M.D.

Instructions for Patients. H. WINTER GRIFFITH, M.D. Price, $25.00. Pp. 670. Philadelphia: Saunders, 1968.

"Instructions for Patients" by Griffith is a 6½-pound, leatherette, 2¾-inch, 1-foot square, loose-leaf compendium, costing $25.00. The admirable intent is to enhance the effectiveness of communication between doctor and patient by allowing the physician to Xerox® a copy of instructions from the book. Three hundred and thirty topics are presented, dealing with various medical diseases, surgical procedures, radiologic examinations, therapeutic agents, diets, and unmarked illustrations suitable for adaptation for a specific problem. An adequate index is provided.

The diets are adapted primarily from the Mayo Clinic Diet Manual. A list of high potassium foods is particularly helpful. Instructions are given on topics ranging from sponge-bathing to multiple myeloma (". . . a serious disease which originates in the bone marrow and affects the blood, kidneys, bone, and other parts of the body"). The instructions on any given topic try to strike a happy medium between too much and too little information.

Several modalities of therapy are usually suggested; the patient could easily feel that he was undertreated.

(*Continued on page 20*)

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Book Reviews

(*Continued from page 18*)

The author necessarily presents information in a style that suits him. (His is quite a reasonable approach.) However, physicians with differing style will find it difficult to adapt in regard to some subjects. For example, many would not choose to alarm a new patient with mild ulcerative colitis with "There may be fever, 10 to 20 bowel movements daily . . .," or that ileostomy might eventually be needed: "This is not as distasteful as it sounds . . . ."

The loose-leaf feature is designed to allow office-copying of a given set of instructions (this would often cost 5 to 10 cents per copy). In view of the wide range of topics and the necessarily restricted applicability of each item it is recommended that appropriate topics be selected from the library copy and individual reprints requested (at 5 cents each).

CHARLES P. DUVALL, M.D.

Textbook of Radiologic Technology, 4th ed. CHARLES A. JACOBI, B.Sc., R.T. (A.R.R.T.), AND DON Q. PARIS, R.T. (A.R.R.T.). Price, $12.75. Pp. 480, with 384 illustrations. St. Louis: Mosby, 1968.

This is a book written by X-ray technologists for X-ray technologists. The question may be raised whether this book review should not be presented in a journal for X-ray technicians only, or has it a place in a medical journal? This reviewer believes that this type of book should be of interest for physicians as well. Physicians, either radiologists or nonradiologists who are involved in X-ray examinations, should of course be interested in the methods of technical procedures. The supervising physician should be interested in knowing what kind of textbook is available for the technologist which can be used as a daily reference. The quality of the X-ray examination depends to a great extent on the technical quality of the roentgenogram obtained. In this area there is a great need for further improvement.

This is a well written and, in general, a well organized textbook which tries to cover all of the knowledge needed for a radiologic technologist. It discusses the duties and ethical requirements of a radiologic technologist and the basic physical and anatomical knowledge needed in his daily activities. The main portion of the book describes the methods of positioning the patient for the different types of examination. Radiation protection is adequately emphasized.

A few minor criticisms should be mentioned. The terms "anterior" and "posterior," when postero-anterior and antero-posterior beams respectively are used, are unusual in this country and to this reviewer do not seem to be justified. The quality of some of the illustrations could be improved. This is important because the technologist has to be familiar with many details of a typical roentgenogram in order to be able to evaluate the projectional changes needed in a subsequent film. Common errors and misconceptions, as everyday practice shows, should be considered in such a book, and in a following edition such a chapter hopefully can be included.

As a whole this is a good book which can be recommended to X-ray technologists both as a textbook in school and for the experienced to use as a source of reference. The fact that this is the fourth edition indicates its value. It is not recommended for physicians who are interested in X-ray technology for their own education. For that purpose more suitable books are available in the American medical literature.

BELA GONDOS, M.D.

Synopsis of Surgery. RICHARD D. LIECHTY, M.D., AND ROBERT T. SOPER, M.D., with 21 contributors. Price, $12.50. Pp. 1091, with 346 illustrations. St. Louis: Mosby, 1968.

When I was asked to review the "Synopsis of Surgery," I was eager to do so. Ever since my contact with Mosby's "Synopsis of Pathology" by W. A. D. Anderson during my medical school training, I have been impressed with this sort of presentation of data in a medical text.

The authors ably describe in their preface the aim of this 5½ by 8-inch book. There is no attempt to replace the complete, full-length textbooks already on the market, of which there are many excellent examples. The authors quote a recent J.A.M.A. editorial describing their prediction of a basic change in the textbooks of the future. Medical data will probably be presented in 2 distinctly different forms. One will be the complete reference work and the other type will be more of a concise presentation of the core of a field of study. The "Synopsis of Surgery" attempts to fulfill the latter category. With earlier specialization, emphasis on greater individuality in medical school training, and more flexibility in elective studies, more easily and rapidly readable textbooks are in imminent need.

For example, the chapter on Fluids and Electrolytes gives very simple diagrammatic comparisons of volume defects, easily comprehensible. Much of the frustration among medical students and interns in learning proper handling of fluid, electrolyte and acid-base management might be lifted with this type of simple presentation.

Similarly, the chapter on Pediatric Surgery is fairly inclusive, despite its brevity, in surveying the most common surgical problems seen in this age group. The table listing the common congenital anomalies and comparing anatomic deformity, clinical characteristics, treatment, and prognosis provides a handy reference list.

In summary, I find this work an easily readable text of concise, yet inclusive material covering the field of surgery. It fulfills the need for a surgical textbook that can be picked up and perused quickly and frequently. This will especially enable the nonsurgically-oriented student to obtain efficiently a good background of the main core of surgical principles and philosophy without the sometimes frustrating exertion of wading through the long textbooks we now use.

EDWIN R. LAMM, M.D.

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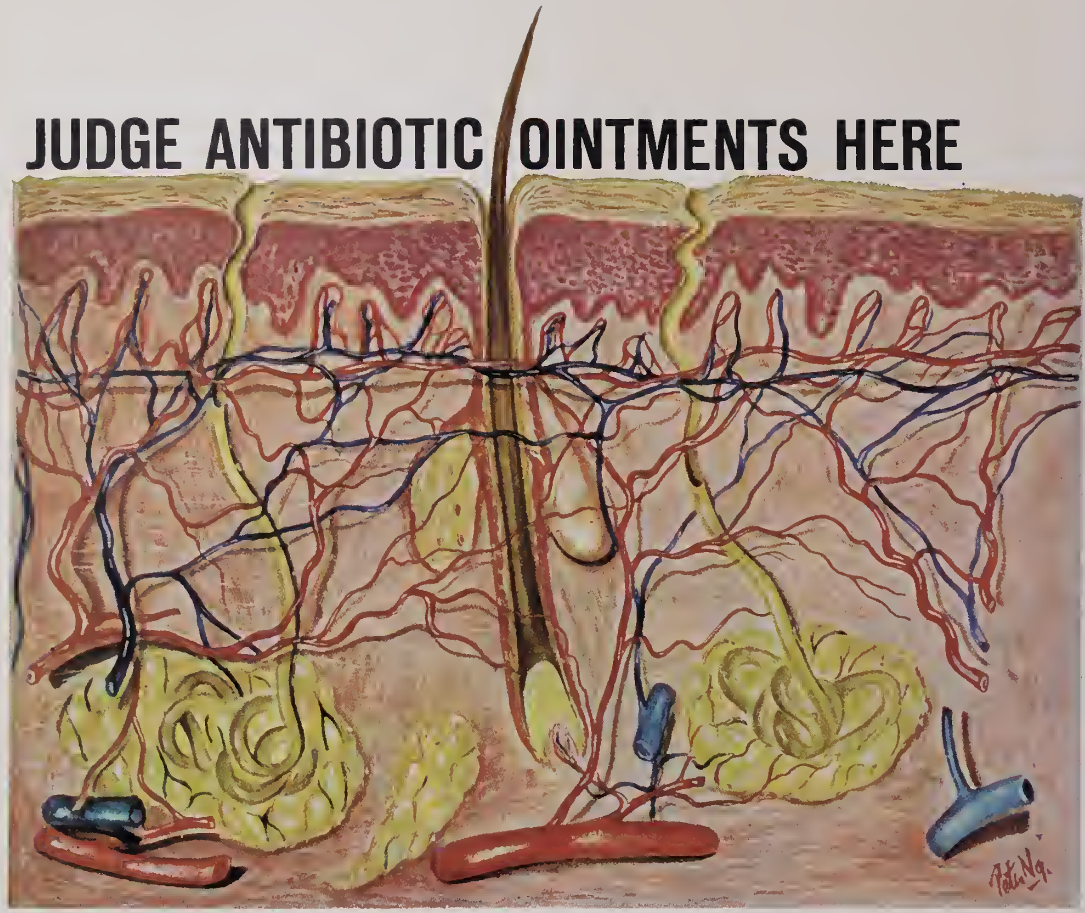

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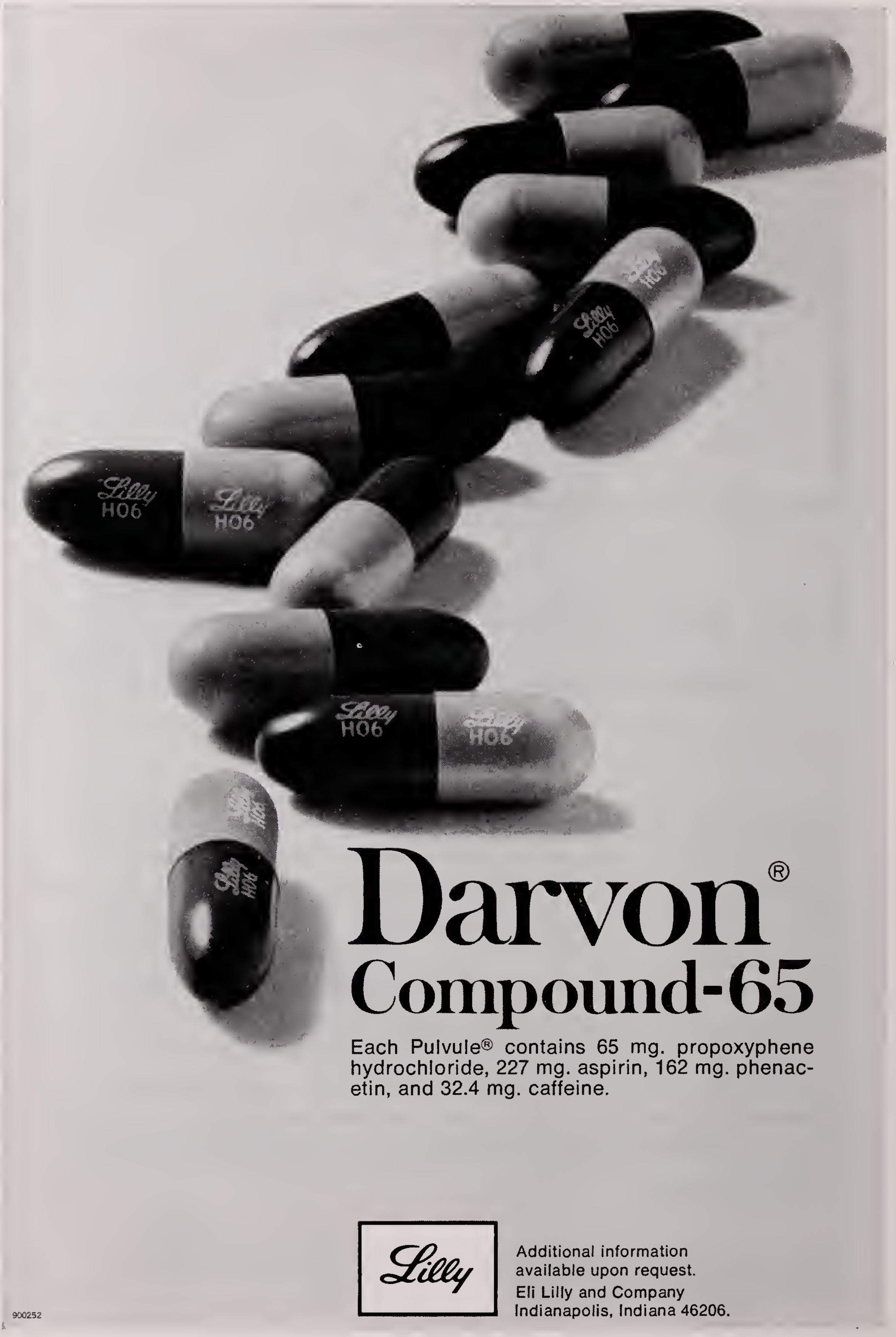

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The Delivery of Health Services

MURRAY GRANT, M.D., D.P.H.*

Much has been said and written in recent times concerning the "chaotic" conditions surrounding the modern delivery of health services in the United States. It is, of course, not too difficult to document many examples which depict the the rather archaic methods used for taking care of patients' health needs. It is, however, not so simple a matter to find ready, workable solutions to some of our existing problems.

Historical Background

It may be useful before delving into the future to look at the past, since the current manner by which medical services are rendered to those of low income began many years ago. As a matter of fact, medical care for the poor essentially began with the Elizabethan Poor Law in the early part of the 17th century. That era saw the establishment of alms houses in England, which set the style for dispensaries which were subsequently developed in the United States, the first of these being founded in Boston in 1796. They were essentially local drug houses where the poor could receive free medications. The Industrial Revolution produced radical changes in society. Large numbers of workers left the farms to seek their fortunes in the city. Here they lived under insanitary conditions, and death rates in the cities rose greatly. It is interesting to compare the demographic changes that have occurred in this country during the past quarter century or so and to note the many similarities with what happened during the Industrial Revolution, with, in many cases, rather similar results, particularly in so far as the effect of this urban migration on the workers is concerned and on the general conditions within the central city. The situation became so bad by the middle of the 19th century that demands for social reform began to set in. These reforms dealt with working conditions, housing, welfare, education, and sanitation. As a matter of fact, it was during this period that the practice of medicine began to come into its own.

The Cost of Medical Care

During these early days of medical practice, costs of providing such elementary services as were then available were relatively small, although still beyond the means of a high percentage of the working class. However, as medical technology has advanced and modern therapeutic methods, facilities, equipment, and drugs have been developed, the cost of medical care has continued to rise. Today, the average person spends approximately 6 per cent of his earnings on medical and dental care; however, it is important to realize that these are merely average figures. It is well known that as one goes down the socioeconomic ladder the prevalence of human disease rises. Thus, illness tends to strike more often in families least able to afford medical care. While a high percentage of persons have been able to receive some coverage from health insurance plans, it need hardly be pointed out that this coverage is by no means complete for most people and, for the poor, health insurance premiums have risen to a point where they are out of reach of many of these individuals.

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* Director of Public Health, District of Columbia Department of Public Health, Washington, D. C. 20001.

Health Services for the Poor

While one can easily conclude that the provision of health services even for the well-heeled leaves much to be desired, services for the poor are appreciably worse than is true for the remainder of the population. Looking at mortality rates, for example in infancy and for tuberculosis, it is easy to discern a marked difference in the decline in these rates among poor people as compared to the more affluent population. Approximately 60 per cent of children living in poverty have never seen a dentist. In spite of all of our public health directed efforts, in 1968 about half of the poor children in the United States haven't had adequate immunizations; almost half of the women whose babies are born in public hospitals have had no prenatal care. In 1968 an infant born to poor parents has about twice the risk of dying before reaching its first birthday as compared to a more affluent child. Its chance of dying before reaching the age of 35 is about 4 times as great. Poor families have 3 times more disabling heart disease and 7 times more visual impairment. Tuberculosis is still a fairly important killer in the city. Among the poor, as many as a third have chronic illnesses that severely limit their ability to work.

Take a look for a moment at a poor person who gets sick in the Watts community of Los Angeles. To get to the county hospital means a ride of up to 20 miles. There is very little public transportation, and if the sick person has to get a cab it will cost him about $3.00. When he arrives at the hospital he will find a maze of more than 30 clinics. The one he needs may or may not be open. If it isn't he goes over to the Accident Ward, where he waits.

The Current Organization of Medical Care

During the past quarter of a century the most marked change noticeable has been the increase in utilization of hospital emergency rooms. Orginally the emergency room was designed to care for the patient with a real emergency, but for a large number of poor people the emergency room has become the facility to which they look for physicians' services. It is not, therefore, surprising that some three-quarters of the patient load in the "emergency room" consists of patients who do not have emergency conditions. This, obviously, is making difficult the early detection and treatment of those who really have emergencies and produces the long waiting lines both in the emergency room and in outpatient clinics that are well known and recognized. The long hard bench, the impersonal treatment, the long periods of waiting (often many weeks or months between appointments), and the necessity to undergo a financial investigation are well known prerequisites for the poor patient seeking medical care. Most outpatient clinics operate only during the day, thus necessitating loss of work in the case of a sick man seeking care. Furthermore, the clinics are commonly organized for the convenience of the professional staff rather than the patient. Clinics are geared particularly to the needs of interns and residents to pursue their training program and to meet the requirements of accrediting bodies. The patient seems merely to be incidental to the main purpose, which is teaching.

The Health Manpower Crisis

One of our most serious current problems in the health field revolves around the problem of health manpower supply. It is well known that even in those areas of the country considered to have a reasonably good supply of physicians and dentists, at least by United States standards, these individuals are so busy that even the well-to-do may have to wait for long periods for medical care in the private physicians' offices, while dental appointments may not be available for several weeks or months. There is no question that the current supply of physicians and dentists coming out of medical and dental schools each year is not keeping up with the demand for service. Furthermore, increased tendency to specialization and apparently increased desire of new graduates to go into fields such as teaching, research, government service, and industrial medicine even further reduce the ranks of those persons who are available to provide direct medical care; the outlook does not appear particularly bright for the next several years—this, in spite of all of the efforts being made to increase the size and number of professional schools. Nurses, too, are in extremely short supply, some public hospitals being a third short of the complement of nurses for which they are budgeted. Not only are there severe shortages of physicians, dentists and nurses, but this is equally applicable to the many allied paramedical personnel such as physical therapists, medical technicians, laboratory workers, medical social workers, etc.

If there is a shortage of health manpower for the affluent, how much more so is this true for the poor. There is certainly very little tendency for the graduating physician who wishes to engage in private practice to locate in the ghetto area. While there is more than 1 doctor for 700 patients in New York City, in one poor area of the Bronx there is 1 doctor for 10,000 people. Along with the exodus of affluent citizens to the suburbs has gone an exodus of physicians and dentists, thereby denuding the central city of a supply of health professionals. Those well-heeled patients who remain in the central city can easily go to physicians in other parts of town or in the suburbs. The poor, lacking means of transportation, go without medical care and have had no alternative other than to use the emergency room and outpatient clinics of the charity hospitals.

It is clear that any changes to be made in the method by which health services are delivered must take into consideration the health manpower supply. Certainly efforts have been made, particularly in recent years, to recruit, train and utilize, to an increasing degree, "subprofessional personnel." Physician and dental assistants, "health aides," family health workers, laboratory aides, nurses' aides, and other similar categories of personnel have come into increasing use during this time. There is no question that the years ahead will see even more emphasis placed on utilization of these less skilled workers who can play an important role in relieving professional personnel of some of the more routine tasks which they do not necessarily need to perform and for which these less skilled individuals can be trained.

The Dichotomy between Public Health and Medical Care

Ever since the time that health departments were first established it has been traditional for the public health agency to concentrate on establishing programs geared to the prevention of disease or disability and the promotion and protection of the public health. They have had little responsibility until fairly recent times for the provision of medical care for the poor. Nevertheless, the poor have required medical care just as much as they have required immunizations and a pure supply of water. The result of all this has been that when the mother brought her baby to a health department well-child clinic that baby could only receive preventive type services; if the baby got sick, the mother had to take him somewhere else. It has been, to say the least, very difficult for the individual to know where to go to get the care he needs. The maternity clinic is in one location, the child health clinic is in another, the chronic disease clinic is located in another place, and the hospital emergency room is still elsewhere. Not only that, but the hours of operation of these clinics have been quite irregular and there is no easy way by which the poor mother who is trying to get care for her child can find the clinic, the place, and the time that quite fits into her needs. As a matter of fact, many of these traditional public health type clinics have operated during a 2- or 3-hour session, perhaps 3 times a week, or even less, so that the rest of the time the clinic facility is not used and the personnel are not there. Aside from the difficulties encountered by the poor patient it is obvious that this is an inadequate use of physical facilities, particularly in these days when real estate is at a premium.

The Neighborhood Health Center

It is for these many reasons that steps are now being taken, increasingly in many localities in the country, to develop a different approach to the problem of providing health services for the poor. The approach has not been quite the same throughout the country and there is little question that experimentation is of real value because there is no simple solution to the problems already cited. A number of avenues must be explored. Basically, however, the efforts now being made depend primarily upon the establishment in low-income areas of a family health center serving a population of, say, 25,000 and providing a 1-stop family health service, somewhat similar to the general practitioner of bygone days but with some refinements. In the program being developed for the Nation's Capital our plans provide that the neighborhood health center will be located in some 3,000 square feet of space, and in that space we will employ some 20 full-time persons, including 3 physicians (an internist, a pediatrician and an obstetrician), 3 registered nurses, a licensed practical nurse, 6 health aides, a nutritionist, a medical social worker, a mental health worker, a laboratory technician, 2 clerks and a neighborhood health worker. Except for the fact that the District already has some 19 community-type dental clinics located throughout the city, it would be logical for a dental clinic to be included also in a neighborhood health center and it is quite possible that this ultimately may be included as the program develops. Any eligible patient or any member of that person's family, of any age, could go to the neighborhood health center and be seen first by a nurse, who from that time on becomes the family health nurse and would see and follow all members of that patient's family at subsequent visits. The nurse, assisted by the health aide, would perform triage and would send to the appropriate physician only those patients who in her judgment needed to be seen by a physician. Obviously, only the simpler laboratory tests, such as white blood cell count, would be performed in the neighborhood health center, but samples could be taken, if necessary, to be transmitted to a central laboratory for more complicated examinations.

While it would be anticipated that many of the patients' health problems could be handled right in the neighborhood center, those requiring more complicated diagnostic and treatment procedures would be referred to the next level of care, which in the case of our program in Washington is the "area health center." Here there would be located a consultation clinic, together with the whole array of specialty, mental health and mental retardation services, dental and podiatry clinics, multiphasic screening programs, etc. Should the patient require the specialized services of a hospital, this would be the third level of care to which the patient could go from the neighborhood health center via the area health center. Each area health center would serve between 6 and 10 neighborhood health centers. The emphasis, however, would be on the neighborhood health center, and copies of all patient records would be transmitted back to the neighborhood health center, which has the primary responsibility for handling the family's health problems. At the neighborhood health center a combination of preventive and treatment services would be provided, but there would be no such thing as a well-baby clinic or a maternity clinic; there would be a family health service. A child could be seen whether he was sick or well, the mother could be seen for birth-control advice, for prenatal care or for gynecological problems, and the man of the house could be seen for whatever health problems he had. There is room, of course, in this program for a variety of approaches. For example, it would be perfectly possible for the professional staff to be supplied by our medical schools, with reimbursement coming out of the Medicare and Medicaid programs for publicly supported patients while private patients could be seen and paid for in the usual way. There is also no reason why a private practicing physician could not participate in such a program. Training opportunities for students clearly exist in such a setting.

A modification of this approach is being taken by the National Medical Association. They have become interested in helping to supply physician services to ghetto areas by the development of a "group practice" clinic arrangement. Under this plan they hope to construct a clinic building with Federal financial support in a low-income area and locate Negro physicians who will be available to serve the residents of that area. In Washington this program is also being tied in to our overall neighborhood health-center program and, in fact, this group-practice clinic would become a neighborhood health center supported by Medicare and Medicaid funds and assisted by ancillary personnel from the Health Department.

A third possible approach revolves around the provision of a group-practice plan accompanied by prepayment insurance, under which the local government might provide the financing for the prepaid insurance plan with the eligible citizens being able to take advantage of the program.

In any of these approaches, however, one common theme that is being followed is that the citizens of the area need to be involved in the planning process and in the implementation of the program. To this end, a citizens' advisory committee has been appointed for each neighborhood health center and is intimately involved in the program. This new role for low-income citizens in the inner city areas is, without question, here to stay. It has become increasingly recognized that these people must have some say in the programs that are being planned with them in mind. They want to play a part in planning the program and in trying to ensure that it meets their needs. They also would like to have some of their own residents trained and employed in the program. The neighborhood health worker provided for in Washington's health-center program would, in fact, be recruited from the neighborhood, trained and employed within the local health center. There must be an avenue available for discussion of problems and complaints. There must be an opportunity for the hours of the clinic to be established so that the citizens who are to be served can be seen at reasonably convenient times.

This, then, represents the new approach being taken to the delivery of health services in low-income areas. Experience only will tell to what extent these programs are possible to develop throughout the country and, also, to what extent they prove successful in meeting the needs of the poor in a way that is satisfactory to them as well as to the professional personnel who are helping plan and work in the program. There is little question that changes in program content will occur and perhaps different approaches tried. But try we must, for it is clear that our present systems are not working, are not meeting the needs, and are not really designed to adequately meet the needs of the people we serve.

Case-finding in Venereal Disease Control with Special Reference to the District of Columbia Department of Public Health

C. WENDELL FREEMAN, M.D.*

THE PROGRAM of the Venereal Disease Control Division of the D. C. Department of Public Health has as its main objective to find and treat every case of syphilis, gonorrhea, and other venereal diseases in the District of Columbia. The more effective this case-finding program, with the use of every means available, the larger will be the number of patients found infected. The goal is to eventually locate all or most of the infected patients who live in the community and by continued optimum control efforts to achieve a gradual decline in the total number of infectious cases present in the city.

Statistics of Venereal Diseases

Nationally, it is estimated that there are at least 1,200,000 cases of gonorrhea occurring in the United States in any single year. Of these, only 376,000 are diagnosed and reported to health departments. The actual occurrence of new cases of syphilis is estimated at 80,000 a year, of which 21,090 are diagnosed and reported. The number of untreated patients in the latent stage of syphilis is estimated at 639,000. These cases form a large reservoir of patients needing treatment.

The Director of the National Communicable Disease Center stated that there has been a 12 per cent increase in reported gonorrhea cases in each of the last few years and concludes that the incidence of this disease is dangerously increasing. Testimony before the House Appropriations Committee showed that in certain population groups 35 per cent of the women are silent carriers of gonorrhea. The frequent asymptomatic nature of this infection in females, the inadequacy of diagnostic procedures, and the resulting difficulty of bringing these patients to examination, diagnosis and treatment compound the problem. The measures to control adequately gonorrhea are not available. Improved diagnostic and treatment techniques must be developed if we are to approach control. Dr. William J. Brown, Chief of the Venereal Disease Program, stated that gonorrhea is "out of control" and predicted that 1.3 million Americans will have become infected with this disease in 1968. This estimate is 25 per cent higher than in 1966 and twice the number of a decade ago.

Diagnostic and therapeutic techniques are available to control syphilis, but in spite of these controls which have been available for many years our most optimistic assessments are that the incidence has stopped increasing but has not been appreciatively reduced. One possible factor which may influence incidence is under-reporting. Only 25 per cent of cases of syphilis treated by private physicians are being reported to the health department, although some estimates indicate that they treat 75 per cent of all venereal disease in the United States.

Much of the venereal disease in this country never becomes a matter of record since there are many patients who, for various reasons, never become a statistic. Chief among these unreported cases is the large group of private patients who, fearing exposure of a sexual indiscretion, demand secrecy and nonreporting by their physician. Add to these the 20 per cent of source- or spread-contacts who cannot be traced even with the best epidemiologic effort. The unethical drugstore and self-treated patients contribute another group of unreported cases. A large group of patients develop a venereal disease and never know they have been infected. In females the primary lesion of syphilis or the discharge from gonorrhea may be on the cervix, and the rash which is present in secondary syphilis is often self-diagnosed as due to food or allergy. The statistics on incidence, published by the U. S. Public Health Service, suggest under-reporting when Syracuse, N. Y. reports only 11 cases of early syphilis during fiscal year 1967; Providence, R. I., 16 cases; Buffalo,

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* Chief, Venereal Disease Control Division, D. C. Department of Public Health, Washington, D. C. 20009.

N. Y., 22 cases; Akron, O., 19 cases; Dayton, O., 7 cases; Omaha, Nebr., 8 cases, and St. Paul, Minn., 2 cases. Fourteen cities of more than 200,000 population reported not a single case of granuloma inguinale, chancroid, or lymphopathia venereum during 1967, and 8 cities reported only 1 case of this group of 3 venereal diseases. The question could be asked whether these statistics reflect the incidence of disease or the incidence of reporting.

Syphilis and gonorrhea are diseases usually contracted through secret, illicit sex relations. We are confronted with a swelling reservoir of unfound, unreported infections the size of which no one can accurately estimate. Since this variable is unknown, the 772 cases of early syphilis reported in fiscal year 1968 in the District of Columbia cannot indicate what part of the reservoir this number represents.

While admitting the possibility that an increase in the number of cases of venereal disease does possibly represent a true increase, it is possible that any increase in reported cases is the result of improved case-finding and that the total reservoir is not increased proportionately to the increase in reported cases. We have no means to determine how many cases existed in the District of Columbia in the year when 772 patients were found and reported. Were there 1,000, 2,000, or 5,000 included in the group of unreported cases because they were not found?

In 1967, 604 cases of infectious syphilis and 11,615 cases of gonorrhea were reported to the D. C. Department of Public Health. Reports were received of 112 cases of syphilis and 420 cases of gonorrhea from a total of over 2,000 private physicians.

Under-reporting is a major problem of venereal-disease control, but this is by no means the only one. The extensive use of birth-control pills and contraceptive devices may be related to increase in venereal disease infections. Relieved of the hazard of pregnancy, the male ceases to use mechanical protective devices, and the female does not rush for a cleansing or antiseptic douche. To what degree birth control has increased incidence has not been documented, but removal of the fear of pregnancy increases promiscuity and increases the possibility of venereal-disease infection.

Today, there is an increase in freedom among the teen-age population due, to a large extent, to lessened parental restraint and an increase in sexual activity and permissiveness. This decrease in supervision encourages sexual experimentation and results in increased exposure to venereal-disease infection.

Another possible factor in increased incidence is that our youths are involved in a war, and increased promiscuity is an accompaniment of wars. Soldiers are returning to the United States from the battle area either infected or with a more indifferent and liberal attitude toward promiscuousness. Many cases of infection due to an Asian strain of gonococcus are appearing on the West Coast and are extremely resistant to penicillin and, therefore, very difficult to cure. All these factors contribute to an ever-increasing reservoir of patients which we attempt to control by finding every case we can with the techniques available. These are not necessarily new cases but infected persons who are in the community but are not treated because they were not found. Were we to lessen our determination to locate every case by closing clinics, reducing our epidemiological staff, neglecting venereal-disease education, and ignoring the importance of reporting by private physicians we would dramatically reduce the number of venereal-disease cases reported, but the patients spreading these diseases would still exist in increasing numbers in the community.

Essentials of Case-finding

Attitude toward patient in case-finding. A friendly "Good morning," a gracious smile, and the kindly attitude of an admitting clerk in a venereal disease clinic are as important in case-finding as any contact this patient may have during his visit to the clinic. Perhaps the patient is unshaven, poorly dressed, dejected and discouraged. If from this friendliness the patient has experienced nothing but courteous attitudes from the aide, the nurse and the physician, how much easier and how much more successful is the task of the epidemiologist when he must question this patient about his sexual contacts. By this time reluctance and secretiveness have been supplanted by an eagerness to be helpful and coöperative.

Clinic facilities in case-finding. The clinics must be bright, cheerful, adequately staffed, and conveniently located. The best diagnostic and therapeutic tools should be available. The medical staff must consist of dedicated physicians, well trained and efficient. Their attitudes will affect the effectiveness of the facility in case-finding and case-holding.

Education in case-finding. In case-finding education has proved most valuable. Mass education of the public through lectures, radio, television or the press must finally have an impact on the number of people in the community who become aware of the facts of venereal diseases—how they are spread, the importance of early diagnosis, the excellent results of proper therapy, the reasons for and the extreme importance of revealing their contacts.

They must learn the penalty of neglect—heart disease, insanity, blindness, disability and death. The results of lay educational effort may be gauged by the fact that there were 90 walk-ins in 1966, 145 in 1967, and 210 in 1968.

In the public schools in the community are teen-agers who may develop gonorrhea or syphilis. The number infected is not large, but even a few cannot help but give concern. The facts of venereal disease must be taught to our junior and senior high-school students so that these teenagers through lectures, slide demonstrations, and the written and the spoken word are made aware of the dangers of infection.

Medical education in case-finding. Medical education also is important in case-finding. Few medical schools have the faculty, facilities or time to properly teach the diagnosis and management of venereal diseases. The health department must act as a source of clinical material and encourage medical students, interns and residents to see patients with infectious syphilis and be instructed in diagnostic and treatment procedures. The health department must be the link between the medical school and the supply of venereal-disease patients and aid in planning for the availability of these patients for teaching purposes.

Private-physician coöperation in case-finding. Twenty-five years ago the vast majority of patients infected with venereal diseases, especially syphilis, were treated by specialists most of whom were found in the public-health clinics. This was true because of the difficulties and complexities of treatment techniques. Now, due to the advent of penicillin therapy, with its simplicity and safety of administration, the general practitioner is seeing an ever-increasing proportion of venereal-disease patients. Many medical practitioners graduating during the past 20 years have been exposed to little or no medical training in the diagnosis and modern treatment of venereal diseases, and they have seen few, if any, lesions of syphilis. Seminars, refresher courses, and other educational aids must be provided to refresh the busy general practitioner. He must be alerted to the tremendous responsibility which is his to coöperate with the health department by reporting his patient and permitting him to be interviewed for contacts. Evidence indicating improved coöperation is shown by the fact that in 1966 33 cases of early syphilis were reported by private physicians and in 1968, 86. The reporting of private patients infected with a venereal disease presents conflicting loyalties, and the inherent difficulties are well recognized. The town banker, the teacher, the highly regarded business man, or other prominent citizens insist on anonymity, and the physician is torn between his responsibility to his patient and the health department.

Epidemiology in case-finding. The goal of syphilis epidemiology is to prevent the spread of venereal disease by bringing to treatment, with the greatest possible speed, every person with syphilis or gonorrhea connected directly or indirectly with the patient. Epidemiology-interviewing accounted for 170 cases of early syphilis in 1966, 189 cases in 1967, and 233 cases in 1968 in the District of Columbia.

Every patient who is infected with syphilis has had close intimate contact with 1 or more persons who have the disease and may have spread the disease to their partners. To track down and bring to examination these source- and spread-contacts is the responsibility of the epidemiologists. In any venereal disease-control program, case-finding by this unit is of prime importance. The description of the contact may be meager; a girl with blonde hair and a red hat; a man with a blue suit and gray hair. The addresses given are often wrong or nonexistent. In the face of the reluctance of patients to name contacts, the epidemiology staff is able to locate 75 per cent of the source contacts and get them examined. Good as this record may appear, 1 out of every 4 known infective source-contacts is never found and may still be spreading the disease to others. Case-finding in venereal disease epidemiology is directly related to the number of effective investigators we have. In 1964 we found 576 cases with 6.7 productive field men or an average of 86.0 cases per man. In 1967 we found 604 cases with 7.1 field men. Still the average of 85.1 cases per man was virtually the same. In 1966 we found 468 cases with 5.4 field men, and the average per man was the same, 86.7. This seems to indicate that the more venereal-disease field men are available, the more cases of infectious syphilis will be found.

Jail survey in case-finding. The Jail Program is primarily a screening program set up by the Venereal Disease Control Division. It seeks to locate and bring to treatment all inmates found to be infected with a venereal disease. Every in-mate, upon admission, is given a serological test, and all reactive patients are then examined for evidence of early syphilis. During fiscal year 1968, 21 cases of primary or secondary and 22 cases of early latent syphilis were diagnosed and treated as a result of this case-finding program.

Reactor reporting in case-finding. All laboratories are now required to report their reactive serological tests to the health department. This reactor follow-up program offers the best opportunity for syphilis intelligence that is available. In fiscal year 1968, 310 infectious cases of syphilis and 225 early latent cases were found by means of this case-finding device. This program insures that every potential case of syphilis in the District of Columbia is known to the health department, and by applying epidemiology to these cases further spread of this disease can be halted. This program accounted for 175 early cases in 1966, 185 in 1967, and 244 in 1968.

Premarital law in case-finding. The premarital law which became effective in the District of Columbia on January 1, 1967 immediately increased our case-finding opportunity. It is estimated that 10,000 marriages occur yearly in this city, and this required 20,000 serological tests. During fiscal year 1968, 1 secondary and 10 early latent cases of syphilis were uncovered.

Epidemiological treatment in case-finding. The epidemiologic treatment of gonorrhea and syphilis may be described as case-finding before any evidence of these diseases is apparent. This form of therapy is administered to direct contacts before any symptoms have developed. At that period it is impossible to know if the patient has been infected. If he were infected, such prophylactic therapy would prevent the development of any symptoms of the disease. In our venereal disease clinics during fiscal year 1968, 476 such treatments against syphilis and 2,162 against gonorrhea were administered.

It is estimated that at least 1 of each 10 direct contacts to venereal disease will be infected. Thus, this practice might be considered as case-finding of at least 47 cases of syphilis and 216 cases of gonorrhea.

General case-finding devices. During the past 5 years many changes in program have been initiated which influenced our case-finding capability. Extensive private-physician visitations have made the physicians aware of the importance of reporting cases and permitting contact-tracing.

The change in the prenatal serologic-testing procedure which now requires a serological test at the time of first diagnosis of pregnancy and a second test before delivery has been helpful in case-finding. By diagnosing syphilis during the first trimester of pregnancy we can, through treatment of the expectant mother, prevent syphilis in the offspring.

By establishing a private interview suite, located in a downtown, unmarked office, where patients and contacts can be interviewed in complete privacy, we find many cases which otherwise would not be known if the interview had to be held in the patient's home or in a venereal-disease clinic.

In one year, in 25 junior and senior high schools, over 26,000 students heard lectures on venereal disease by medical and epidemiological personnel. Literature, slides and films were given to these school groups to increase their knowledge of these diseases. This educational effort, by making this large group aware of these diseases, resulted in improved case-finding.

Other Items of Interest

The law permitting the treatment of minors without prior parental consent has also improved case-finding. Before this law became operative, minors who reported to the clinics had to be refused examination and treatment unless they would return home and bring a parent or guardian with them. Many of these patients never returned. Now these minor patients are treated on the first visit and they name contacts, who in turn are examined to determine the presence of infection.

The health department has made available a 24-hour, 7-day week dark-field service which assures accurate and definitive diagnosis of early syphilitic lesions. This results in finding and treating the patient early and prevents the possibility of losing him through delay.

Too often increased incidence due to improved and accelerated case-finding is wrongly regarded as evidence of failure rather than success of a program.

Perhaps eventual eradication must be delayed until vaccines for these diseases are discovered. The development of a vaccine against syphilis has shown promise. Research scientists have successfully used the causative organism of pinta, a South American skin disease, to infect a chimpanzee. The organisms causing syphilis and pinta are members of the same family, Treponema, and look alike under the microscope. Once a patient gets pinta he is usually immune to syphilis.

(*Continued on page 203*)

The Health Education Aide

ROBERT H. CONN, M.P.H.*

STUDIES OF HEALTH MANPOWER made over the years have shown repeatedly that despite the increasing supply, demands for health services continue to outstrip the resources for producing them. Supply and demand, according to present evidence, will not soon be in balance. The task ahead is not only to increase the supply of well-qualified health workers. It is equally urgent to make the best use of the resources which are available.[1]

This is particularly true in health education. Although the exact number of health education vacancies in the United States can only be estimated, even a cursory review of existing job openings reveals the scope of the problem. There are simply too few professional health educators to meet today's needs.

In the District of Columbia, with its densely populated urban community—where more than one-third of the population live below a minimum subsistence level and where health problems are among the most critical in our Nation—health programs have lagged for lack of health education personnel. At one time we had 10 health educator positions and 7 of them were unfilled.

Realizing that the situation demanded action, the Health Education and Information Division decided on 2 approaches. First, we liberalized the requirements for employing public health educators. Instead of requiring a Master of Public Health degree in health education we began employing personnel with a master's degree in related fields, such as social work or education. And in several cases we employed persons with pertinent experience who had less than a graduate degree. Although these individuals served in professional capacities, those with less education and experience were assigned lower-grade positions.

Second, we reviewed the activities of our health educators in order to identify functions which could be performed successfully by nonprofessionals—individuals without college training. Then by transferring such functions to nonprofessionals we relieved the health educators of time-consuming duties, thus allowing them more time for planning, administration, and evaluation. In this way the health education staff expanded and we were able to offer greater service to our community.

During 1966 we employed our first nonprofessional health education aide, using funds from the U. S. Children's Bureau which were earmarked to help provide health care for pregnant women and their infants, a most important need in the District of Columbia.

In 1966 approximately 7,000 D. C. women gave birth to babies at public expense. About half this number came to delivery with too little prenatal care or no care at all. Our statistics show further that of the 7,000, close to 70 per cent suffered complications.

In all, the Children's Bureau funds provided for the employment of 4 health educators and 6 health education aides who could find and encourage pregnant women to secure prenatal care early in their pregnancy.

The health educators planned the overall programs and discussed the need for prenatal care with community leaders, particularly indigenous leaders, and with community organizations and groups, while the health-education aides systematically compiled a list of pregnant women who might benefit from the program. To do this the aides met with clinic patients and requested the names of their friends who needed prenatal care; they visited laundromats, community centers, adult basic-education centers, and other places where women of child-bearing age congregate. Wherever they found prospective clients the aides discussed the importance of prenatal care on a face-to-face basis. Following their leads they visited the homes of those who needed care and were not receiving it. Often several visits were necessary in order to gain rapport and confidence of the women.

Although the aide's primary interest was to encourage prenatal care, we discovered very early in the program that women in the poverty population—those who face enormous economic and social problems each day, e.g., unwanted pregnancies, a husbandless household, alcoholic parents, limited finances, little or no work skills, and chronic health problems — generally place the need for prenatal care low on their priority list. With these women the health education aide made a special effort by assessing the stumbling blocks—the needs which prevented the client from seeking prenatal care—and then worked first to eliminate these. When the occasion demanded it, the aide not only made the woman's appointment at the clinic but also made arrangements to transport her there.

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* Chief, Health Education and Information Division, D. C. Department of Public Health, Washington, D. C. 20009.

Often the aide escorted a client to the clinic personally, making certain that the client understood the registration procedures, the laboratory tests, and the medical examination. After making arrangements for the next appointment, the aide took the woman home and made plans to see her again in order to guarantee that the appointment would be kept.

When we first recruited health education aides we deliberately set minimum and flexible qualifications. Only a high school diploma was required along with 2 years of "appropriate experience"; this experience could be interpreted as either clerical or related experience.

After interviewing many candidates for these positions we selected those who seemed most communicative, friendly, adaptive, and interested in the program. The aides who were selected had little else in common. They ranged in age from mid-twenties to late thirties, single, married, male, and female.

Although we had some concern about employing male aides to counsel pregnant women, we found that they were responsible for as many clinic referrals as the female aides. Also, the male aides influenced fathers-to-be, who in turn convinced their wives about the importance of prenatal care.

Three weeks of intensive orientation and training provided the aides with sufficient information and the necessary techniques to adequately carry out their responsibilities. Various teaching methods were utilized: question-and-answer periods, field visits to health clinics, lectures, and discussions with staff members and clinical personnel, supplemented by audiovisual aids such as films, pamphlets, charts and models.

Subjects covered during this period included the philosophy of public health, the objectives and activities of the health department, the role of the health education and information division and the maternal and child health bureau, the scope of the maternal and infant care problem nationally and locally, the importance of prenatal care, well-baby care, and birth control. In addition, the aides were instructed in interview techniques and the problems they might face in overcoming a client's resistance to the program.

On the job, the aides were closely supervised by an experienced professional public-health educator. Later, as the aides became more experienced, less supervision was needed. Nevertheless, the supervisor was always available to help the aides with any problems they had. In addition, regular meetings of the aides and their supervisor were conducted. These sessions provided opportunities for the aides to pool their experiences and discuss mutual problems.

As the aides began calling on clients we discovered their most valuable assets—an understanding of the life styles of the poverty population and an ability to communicate in situations where middle-class professionals had formerly encountered resistance and in many cases outright hostility.

Each month of the program the aides sent or took 20 to 30 "hard core" pregnant women to prenatal-care clinics. At the prenatal clinics during 1967 there was an increase of 400 patients and a total of 3,500 more patient visits than during the previous year. During the same period the patient-load at the birth-control clinics increased by 37 per cent over 1966, an actual increase of more than 4,000 women.

No doubt there were numerous factors influencing these figures, but we believe that the health-education aides were most important.

During the 2 years in which we have been employing health-education aides, some, as a result of their training and experience, have moved up to more responsible and better paying positions. One of the aides entered a career-development position with the Federal Government. One accepted a position in another division of the health department. Others have gone on to better paying jobs in the business world. We have continued to fill the vacancies.

In another of our health education-aide programs we utilized the services of teen-agers who had less than a high school education.

During the summer of 1967, using Youth Opportunity Corps funds designated for employing teen-agers, we hired 3 young aides, all of whom were females.

Statistics showed almost 16,000 resident births during 1966. Of these, almost 5,000 babies were born to unwed mothers, some 50 per cent of whom were teen-agers.[2] The venereal disease rates are equally startling. For fiscal year 1967 an infectious syphilis rate of 76.3 per 100,000, representing 706 cases, was reported, the second highest rate among all U. S. cities with a population of 200,000 and over. During the same period the gonorrhea rate of 1,466 per 100,000 (11,615 cases) was the highest in the U. S. Teen-agers represented 14 per cent of the infectious syphilis cases and 22 per cent of the gonorrhea cases reported.[3] We hoped to make an inroad into these problems through the teen-age aides.

It is well known that teen-agers discuss sex among themselves, often exchanging misconceptions and misinformation. This type of peer-group communication, we decided, could be used just as easily to spread factual, up-to-date sex education if we used carefully trained teen-agers who could talk to their peers as health department emissaries.

In June 1967 when the 3 aides appeared for work we discussed with them and their parents our plan for providing sex education to District of Columbia teen-agers. All thought the program worthwhile, and the aides began their training.

For 3 weeks, using the same teaching methods and techniques that were successful with the maternal health aides, the health-education staff taught the aides the basic facts of sex education, birth control, venereal disease, and prenatal care and explained the health department clinical facilities, the philosophy of public health, and the objectives of health education. In addition, the aides learned techniques of interviewing and compiling information.

As soon as the aides were able to answer sex-education questions intelligently, the health-education staff enlisted their assistance in developing an open-ended questionnaire intended to stimulate discussion.

After a brief pretesting the aides took the questionnaire into the community and began interviewing in community centers, swimming pools, parks, and other areas where teen-agers congregate. The routine was simple: On approaching a teen-ager, the aide explained, "I'm doing a survey for the District of Columbia Health Department; would you answer a few questions?" This technique almost always met with an affirmative response. Then the aide began the questions: How would you know if you caught venereal disease? How can a girl tell if she is pregnant? Where do teen-agers go for information about health care for pregnant girls? If the teen-ager interviewed answered correctly the aide went on to the next question.

However, if the answer was incorrect the aide provided a correct one by engaging the individual in an explanatory discussion.

During the 2-month interviewing period almost 800 teen-agers were reached. It was estimated that more than half of these had misconceptions, particularly about venereal disease, birth control, and pregnancy.

Working with these teen-age aides and with the adult aides—all nonprofessionals—in the prenatal care program we in the District of Columbia have found a partial answer to our health-education manpower dilemma. The future will no doubt find expanded use for this newfound resource.

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Experience in Screening of Low-income and Indigent Women for Cancer of the Cervix—A Public Health Study

DONALD D. HAUT, M.D.*

THE USE OF EXFOLIATIVE CYTOLOGY has contributed immeasurably to the early detection of cancer of the cervix. The introduction of the Davis cytopipette promises to broaden still further its applications to mass screening.

The Davis cytopipette, which employs the irrigation principle, has recently undergone extensive study in clinical trials with results comparing favorably to results with the cervical-scrape method.[1-5]

Relative to mass-screening, the cytopipette possesses a decisive advantage. It can be used by the patient herself in the home or other private area and is not dependent upon the factors limiting the availability of the cervical-scrape method, such as the presence of a physician, assistants to prepare the patient, and the physical facilities necessary to perform the examination. Hence, it can be offered even by mail to practically any women willing to take the test.

For these reasons the District of Columbia Department of Public Health decided to conduct a study to evaluate the suitability of the cytopipette for mass-screening of low-income and indigent women to whom medical service was of limited accessibility.

The information sought was not only clinical but also relative to the most economic means of gaining the greatest public response. A variety of practical methods of distribution were tried and compared with respect to cost and yield. The plan of the study will be described and the findings, both clinical and relative to cost and yield, summarized.

Methods

Four methods of distribution were selected for trial on a sample population of 5,000 women composed of welfare recipients and residents of low-income urban areas. The age-range was limited to women between 25 and 50.

The sample population was divided into 5 equal groups, each containing 1,000 women. Each of 4 groups received the cytopipette by a different method of distribution, as follows:

Group 1: 1,000 welfare recipients to whom the cytopipette was mailed.

Group 2: 1,000 welfare recipients to whom the cytopipette was offered on a home visit by a health aide (Health Department employee, with brief training in distribution technique).

Group 3: 1,000 low-income urban-area residents under the care of public health nurses, distribution made in the course of routine daily activities.

Group 4: 1,000 low-income urban area residents to whom the cytopipette was offered by volunteers from a neighborhood community center.

The remaining Group 5 was a control for the purpose of comparison to the cost and yield of the cervical scrape method under similar circumstances. One thousand welfare recipients were mailed appointments to receive a cervical scrape at a Health Department clinic.

Subsequently, another method of distribution was tried. It will be identified as the "Special Group." This group of 50 low-income area residents was offered the cytopipette by a physician at a community meeting. Though of a smaller magnitude, the results are pertinent to the study.

All participants in the study, except those in Group 5, received an examination kit consisting of a mailing tube in which was enclosed the cytopipette, a gummed return-addressed mailing label, and a set of simple test instructions. On the back of the instruction sheet there was a "life-saving message" and a detachable blank form for the necessary information to be supplied by the patient. After taking the test the patient replaced the used cytopipette in the mailing tube along with the completed form and sealed the tube with the return-addressed label. In the groups offered the test face-to-face a determined effort was made to collect the specimen immediately. If this was inconvenient for the patients they were instructed to submit the specimen by mail with the least possible delay. Only 1 attempt was made to contact and offer the test to a participant. This provided a common denominator for comparison of the group responses.

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* Office address: 1835 Eye Street, N.W., Washington, D. C. 20006; formerly Section Chief, Disease Detection Clinic, Area C, D. C. Department of Public Health.

All patients having Class I and Class II results were advised to repeat the examination annually. Patients having Class III results were followed by the Health Department if they were indigent. If they were already under the care of a private physician or clinic, they were referred accordingly for further management. The patients followed by the Health Department were recalled for a cervical scrape and pelvic examination. If they had evidence of infection the examination was again repeated after treatment.

Results

Table 1 is a tabulation of the clinical findings from groups screened with the cytopipette (Groups 1 through 4, and the Special Group). Among the 802 satisfactory specimens submitted 1 Class IV smear was found. A biopsy revealed carcinoma in situ, and the patient had a total abdominal hysterectomy. Forty patients were found to have Class III smears and were recalled for cervical scrapings. Fifteen of those reporting for follow-up were reclassified Class I or Class II on the basis of cervical scrapings and were instructed to return for periodic screening. The other 25 are being followed either by their private physicians or by the Health Department. Follow-up is incomplete but 7 of those under the supervision of the Health Department remained Class III by cervical scrape and received further diagnostic procedures at the D. C. General Hospital, as shown in table 1.

Of the 807 satisfactory cytopipette specimens submitted, 602 were Class I and 164 were Class II. These patients were instructed to repeat the screening annually.

Table 1 shows the large number (199) of unsatisfactory cytopipette specimens submitted. Two factors account for this. Both are avoidable with adequate instruction of the patients. A small number had insufficient material for examination. The patient should be instructed to check the specimen for turbidity, which indicates the presence of adequate cellular material for examination. If not present, the irrigation should be repeated. The vast majority of unsatisfactory specimens deteriorated because of several weeks' delay in reaching the laboratory. Prompt submission is essential.

TABLE 1: Clinical Findings with Disposition and Follow-up to Date

Cytopipette—Total Specimens Submitted—Groups 1, 2, 3, 4 and Special Group

Class	No. Patients	Disposition and Follow-up to Date
Class I	602	Annual examination
Class II	164	Annual examination
Class III	40	15 Patients referred to their private physicians or clinic physician 8—Follow-up still pending 2—Being followed by periodic Pap smears; no evidence of malignant change to date 1—Reclassified Class I, under supervision 1—Reclassified Class II, under supervision 1—Under supervision for vaginitis 1—Unsatisfactory; patient had total hysterectomy in 1960 1—Total hysterectomy 25 Patients followed by Health Department 6—Failed to respond to letter or telephone call 1—Reclassified Class I; advised to have annual examination 11—Reclassified Class II; recall in 3 to 6 months 7—Confirmed Class III; referred to D. C. General Hospital 4—D and C with conization; no evidence of malignant change 1—Repeat cervical scrape; reclassified Class II 2—Did not report; no response to letter or telephone call
Class IV	1	Referred to D. C. General Hospital; diagnosis, carcinoma in situ Treatment—total abdominal hysterectomy
Class V	0	
Unsatisfactory	199	Will be mailed cytopipette for repeat examination

The clinical findings for Group 5, in which the patients were screened by the cervical-scrape technique, are tabulated in table 2. No Class III, IV or V smears were found. Fifty-three of the 94 specimens submitted were Class I, and 40 were Class II. The patients were instructed to repeat the screening annually. The surprising number of hysterectomies (25) among patients in Group 5 is noteworthy but remains unexplained. Although no specimens were obtained from these patients, all were examined to verify the absence of the cervix.

TABLE 2: Clinical Findings—Group 5
(Cervical-scrape Control Group)

Total response	121	
Specimens submitted	94	
Specimens obtained	27	
25 had total hysterectomies		
2 pregnant—to return after delivery		
Class I	53	—annual examination
Class II	40	—annual examination
Class III	0	
Class IV	0	
Class V	0	
Unsatisfactory	1	to be repeated

The response from each group was determined to find which method of distribution gained the greatest public participation. The response from each group is shown in table 3 as the percentage of those offered the screening who submitted a specimen. The Special Group, in which the cytopipette was distributed at a community meeting, yielded the highest response, 57.7 per cent, followed by Group 4, in which neighborhood volunteers made the distribution 47.7 per cent. Group 2, distributed by health aides, yielded 32.4 per cent and Group 3, by public health nurses, 30.3 per cent response. Group I, the mailed cytopipettes, yielded 20.8 per cent, and Group 5, the mailed appointments for cervical scrape, yielded the lowest, 13.1 per cent response.

TABLE 3: Per cent Response from Each Group

Group 1	20.8
Group 2	32.4
Group 3	30.3
Group 4	47.7
Group 5	13.1
Special Group	57.7

On a cost per respondent (specimen) basis, the Special Group cost the least, $12.32 per respondent, followed in order of increasing cost by Group 4, the neighborhood volunteers, $12.53 per respondent; Group 3, the public health nurses, $14.98 per respondent; Group I, the mailed cytopipettes, $21.27 per respondent; Group 5, mailed appointments for cervical scrape, $26.50 per respondent; and Group 2, health aides' distribution, $42.92 per respondent.

Discussion

The methods employing personal contact gained the greatest response, as the data indicate (table 3). In addition to the statistical information, less tangible factors must also be taken into account for intelligent planning. Simplicity of administration is important. A recent survey reported favorable results using a volunteer organization to make a door-to-door distribution similar to Group 4 in this study. Our experience showed the use of personnel under the immediate jurisdiction of the Health Department to be far more reliable.

All factors considered, the public health nurses (Group 3) provided the most satisfactory method of distribution, the chief reasons being: facility of management, the more favorable image created by a nurse in uniform, their preëxisting rapport with patients, their training and motivation; all these factors make them better suited for this type of "salesmanship" as well as for follow-up.

The Special Group was included in this study to demonstrate that 1 person can easily distribute and collect a large number of cytopipette specimens in a very short time at community meetings as well as clinic waiting rooms, making use of the public rest-room facilities at hand. This technique can be expected to augment the yield of any mass-screening effort considerably. We obtained 30 specimens in less than an hour.

One has to conclude that the immediate collection of specimens should be insisted upon unless there is a valid reason for delay, such as pregnancy or a menstrual period. Even though prompt collection was stressed, an alarming loss of cytopipettes occurred because of failure to submit specimens. Far greater benefit will be achieved by finding women ready to take the test at the time offered.

Follow-up has proven more challenging than expected. The refusal of some patients having atypical findings to undergo further studies is disappointing (table 1). Repeated personal efforts have as yet been unrewarding. The patient should be thoroughly instructed on the necessity to follow through with whatever treatment is indicated before she is handed the cytopipette. Likewise, the attending physician should receive along with the cytology report the recommendations of the pathologist for further diagnostic steps. These measures will greatly facilitate follow-up.

In regard to the laboratory, it should be mentioned that cytologists require additional special training to become qualified in examining specimens obtained with the cytopipette. Before distributions are started the laboratory should have sufficient qualified personnel to handle promptly the largest number of specimens anticipated; otherwise undue delays will occur in reporting the findings.

(*Continued on page 236*)

Tuberculin Skin-testing of School-enterers in Washington, D. C., 1967–1968

SAMI A. KHOURY, M.D.*

THE PURPOSE of the child-centered program in tuberculosis is 2-fold: to identify, examine and treat the infected child and to identify and treat the source responsible for infecting that child. This goal is attained by massive testing of children in schools and the thorough screening of all persons associated with positive tuberculin reactors.

School-enterers in kindergarten and first grade are more suitable than older children for epidemiological follow-up. The duration of infection in this group is relatively short—1 to 5 years, and the source of infection is thus more likely to be detected.

During 1967 the D. C. Health Department, with approval of the School Board of the District of Columbia, established tuberculin skin-testing in kindergarten and first grade as a permanent part of health services in schools.

Materials and Methods

The protocol of this child-centered program called for tuberculin skin-testing of all children in the kindergarten and first grades in all public and parochial schools. A written consent by a parent or guardian was required before the child was tested. Children with known positive tuberculin reaction or who have received a recent measles vaccination are not eligible. In ungraded schools, children between the ages of 5 and 7 were tested. Older children in these classes were tested at the discretion of the professional team. Tuberculin skin tests were administered by means of a hypodermic jet injection apparatus.† PPD-S was supplied by the National Communicable Disease Center in Atlanta, Georgia. A single test consisted of 5 TU, and reactions with an induration of 5 mm. or more were read as positive.

Each testing team comprised 1 public health nurse, 1 clerk, and 2 health technicians. Two such teams were usually operating simultaneously in different schools. One hundred fifty-nine elementary schools, with a total enrollment of 31,794 kindergarten and first grade students, were involved in this program.

Approximately 3 weeks before testing, the school principal was visited by the health educator and was given educational material and consent-forms for distribution. About 2 weeks before testing, the senior nurse in the program visited the school to check on the returned consent-slips and to make final preparations for the testing team's arrival. Toward the end of the school year school nurses became more involved in the program and were very helpful in promoting and coördinating these activities.

On the scheduled testing date the testing team, headed by the public health nurse, administered tuberculin tests to all eligible pupils holding signed consent-forms. Forty-eight to 72 hours later the same team returned for reading, and results were then posted in the child's medical record. Whenever a tuberculin reaction was read as positive the child was given a letter to be taken to the parents notifying them of the results and of a forthcoming visit by a public health nurse regarding the test and its implications. Initial follow-up activities were usually carried out by the same nurses who administered and read the skin test.

Associates to a child-reactor either in the family or outside of the household were identified and tuberculin-tested. All positive reactors in schools and among associate groups were referred for a chest roentgenogram. If this examination revealed no abnormality the reactor was put on isoniazid prophylaxis for 12 months.

Tuberculin testing of school enterers started toward the end of November 1967 and continued until the end of May 1968. An interruption of 6 weeks was incurred by the program while the Measles Vaccination Campaign was conducted in March 1968. Despite this gap and with the help of the Nursing Bureau we were able to meet our goals and cover all designated schools in the District.

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*Chief, Tuberculosis Control Division, D. C. Department of Public Health, Washington, D.C. 20009.

† Ped-O-Jet (multiple dose jet injector), manufactured by Scientific Equipment Manufacturing Corporation, Lodi, New Jersey.

Results

Table 1 summarizes the testing and reading activities. This table shows that we were successful in testing and reading only 48 per cent of the total enrollment in the 2 grades. The rate of infection fell within the expected range, 0.6 of 1 per cent.

TABLE 1: Tuberculin Testing and Reading, School Year 1967–1968

	Kindergarten	First Grade	Total
Enrollment	11,904	19,890	31,794
Tested	5,663	11,023	16,686
Read	5,159	10,244	15,403
Per cent tested and read	43.3	51.5	48.4
Number positive	18	80	98
Per cent positive	0.3	0.8	0.6

The reasons given for not testing the remaining children are summarized in table 2. The category "No consent" covers forms not returned, a few refusals, and some incomplete forms. "Others" cover known positive reactors, recent vaccination, and reasons not given.

TABLE 2: Reasons for Not Testing, School Year 1967–1968

Reasons not tested (per cent)	100
No consent	75.5
Absent	15.5
Others	9.0

Follow-up activity of school reactors is summarized in table 3. Since known reactors are not followed up, this table indicates that all eligible reactors received a chest roentgenogram. Three out of the 70 reactors were diagnosed as new active cases of tuberculosis and were hospitalized. All reactors supervised by the Health Department clinics were put on chemoprophylaxis.

TABLE 3: Follow-up of School Reactors, School Year 1967–1968

Total reactors	98
Previously known	28
Reactors X-rayed	70
Per cent eligible X-rayed	100.0
Reactors on prophylaxis (H.D. clinics)	59
Supervised by other facilities	8
New active tuberculosis cases	3

Associate follow-up is summarized in table 4.

Results of roentgenographic screening of the associates' group are shown in table 5. The total number X-rayed included 101 positive tuberculin reactors, 24 with negative tuberculin reaction, and 42 who did not receive a tuberculin skin test. Five new active cases of tuberculosis were detected among the associates to school reactors, bringing the total to 8 new active cases. All of them were hospitalized for initial treatment. Ninety-two reactors were put on chemoprophylaxis, bringing the total of reactors on isoniazid to 151.

TABLE 4: Results of Associate Follow-up, School Year 1967–1968

Reactors eligible	70
Associates identified	546
Average associates per reactor	7.8
Associates examined (test and/or X-ray)	469
Per cent examined	85.0
Tuberculin tested	427
Positive	105
Per cent positive	24.6
Total X-rayed	167
Reactors X-rayed	101
Per cent reactors X-rayed	96.0
Reactors on prophylaxis	92
Per cent eligible on prophylaxis	92.0

TABLE 5: Results of Roentgenographic Screening of Associates, School Year 1967–1968

Total X-rayed	167
No abnormalities	149
New active tuberculosis cases	5
New inactive cases	8
Known inactive cases	5

Discussion

Tuberculin-testing of school-enterers and screening of associates to positive reactors is a rather new method of detection in tuberculosis control. The effect of this approach can be clarified by the following considerations: From 1961 through 1967 new active cases reported in the District of Columbia with extent of the disease specified, excluding primary tuberculosis, had a rather stable composition.[1] Average percentages of these years compared with the same averages for the entire United States are seen in table 6.[2]

TABLE 6: Profile of New Active Cases, Excluding Primary, in 7 Years, D. C. and U. S.

	D. C. *Per cent*	U. S. *Per cent*
Cases with extent specified	100	100
Minimal	14	21
Moderately advanced	38.6	43.6
Far advanced	47.4	35.4

Approximately half of the D. C. group were not discovered until they had reached a far-advanced stage in their disease. It is noteworthy that variations above or below the given averages were minimal during these years.

The classical methodology of detection relies mainly upon the response of the patient himself. This patient is supposed to seek medical care and thus make himself available to our means of detection. Given these conditions, previous rates reflect the prevailing attitude of both the patient and the health agencies. A more dynamic and aggressive approach to the problem would be to seek the patient rather than wait for him to seek the service. The major lead to a possible source of infection remains a child reactor, and better, a recent converter.

Eight new active cases of tuberculosis were detected in the program this year, 3 in schools, all of them primary, and 5 among associates. This latter group comprised 2 primary, 1 minimal, and 2 moderately advanced. Considering the high rate of far-advanced tuberculosis detected in the City at large, the absence of far-advanced cases in those detected through the child-centered program may be of significance. Thus it might be reasonable to assume that the child-centered program will have a great influence on the future of tuberculosis control in the District of Columbia.

Testing methods were the subject of thorough consideration, and the final decision to use jet injectors was made on the basis of available budget, manpower, and time. In order to avoid possible false-negative readings, reactions with 5 mm. or more of induration were read as positive.[3, 4]

All positive reactors were requested to have a chest roentgenogram. Associate identification was made as extensive as possible. The overwhelming majority of associates were screened by tuberculin testing. A few others, mainly adults, were screened by roentgenograms.

The total rate of infection in school-enterers was 0.6 per cent. The same rate was found in Project Head Start children tested during the summer of 1967.[5] Infection rates were not similar in both kindergarten and first grade: 0.3 per cent and 0.8 per cent, respectively. These results are comparable to those reported by the U.S. Public Health Service for the year 1966–1967, using the jet injector (table 7).[6] This increase in infection rate from kindergarten to first grade, if maintained, may be in future years the most significant lead to possible sources of infection.

The size of induration for both grades is shown in figure 1. As expected, this figure shows a large group of children reacting with an induration ranging from 1 to 4 mm. Compared to the figures reported by the U.S. Public Health Service,[6] the average is lower in Washington, although the kindergarten rates are higher. Table 8 illustrates this comparison. It is thought that further data are needed before attempting to draw any conclusion from these facts.

TABLE 7: Infection Rates in Kindergarten and First Grades, D. C. and U. S.

	D. C.	U. S.
Kindergarten	0.3	0.2
First grade	0.8	0.8

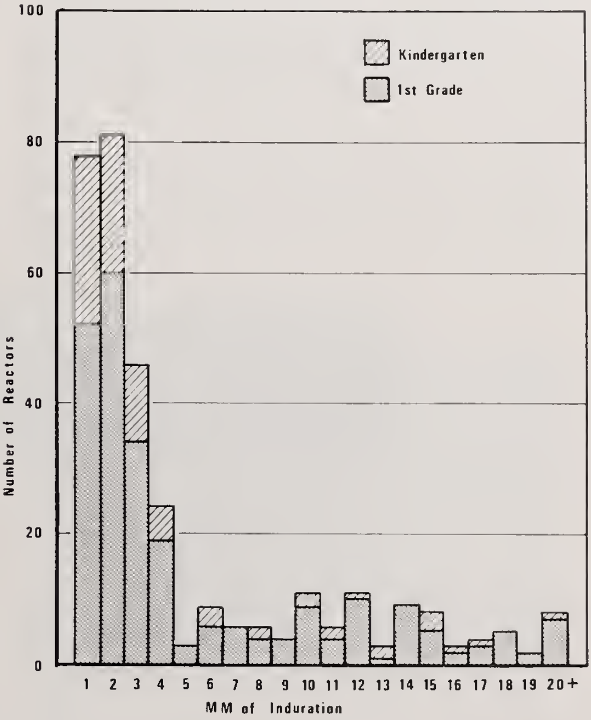

FIG. 1. Distribution of tuberculin reactors by size of induration.

TABLE 8: Percentage of 1–4 mm. Induration in Kindergarten and First Grade, D. C. and U. S.

	D. C.	U. S.
Kindergarten	1.2	0.2
First grade	1.6	5.3
Avg.	1.4	2.7

Geographical distribution of school reactors showed a significant pattern. Mapped by their home address, the 98 reactors appeared to reside in that section of the city which is already known to have a high incidence rate of tuberculosis. Distribution of school reactors followed very closely the distribution of new active cases. In 1967, Statistical Areas 4, 5, 6, 7, 10 and 15 reported 56 per cent of the total new active cases in the District; the same statistical areas accounted for 61 per cent of all school reactors. This correlation remains valid at the lower level of census tract.

Infection rate among associates was 24.6 per cent. This rate is comparable to the rate of 28.5 per cent found in Census Tract 49[7] and may represent the range of infection rates to be expected in poverty areas.

The percentage of children tested, 52.5 per cent, was not as high as expected. Among others, 2 major organizational factors contributed to that result:

First, since testing a child is contingent on receipt of a written consent the class teacher becomes a keystone in the success of the program. Teachers are expected to urge children to bring back consent forms and to issue another form when they fail to do so. Our initial contact with class teachers should have been the public health nurses assigned to schools. School nurses, however, did not become involved in the program until April 1968, when the need for their participation became so obvious. Schools tested in the latter part of the year showed some improvement in their returns.

The second factor was our determination to cover all designated schools in the City despite the lack of adequate time for this operation. It is to be recalled that we started testing in the last week of November 1967, 3 months after the schools had opened. Two weeks were lost during the Christmas holiday and 6 more weeks in the spring for the Measles Vaccination Program. The groundwork, primarily in sending out consent forms, checking returns, and sending forms out again and again until a consent was obtained, was the major "victim" of this shortage in time. This fact is illustrated in figure 2 which shows that about 36 per cent of students did not have a valid consent form, while 7.4 per cent were absent during the testing session.

Chemoprophylaxis was ordered for all children reactors of preschool age or in schools, as well as for adults with large indurations of 15 mm. or more. All eligible school reactors and 92 per cent of eligible associates were put on chemoprophylaxis.

The first year of tuberculin-testing of school-enterers achieved 2 major goals:

1. The program has been solidly established as a permanent part of School Health Services.
2. A critical evaluation of what happened during the first year resulted in improved methods applied in the 1968–1969 operation. Preparation for the latter year started in August 1968 and testing sessions were inaugurated at the end of September 1968. A firm schedule for the whole year was developed and distributed, and school-nurses became very active in the program from the start.

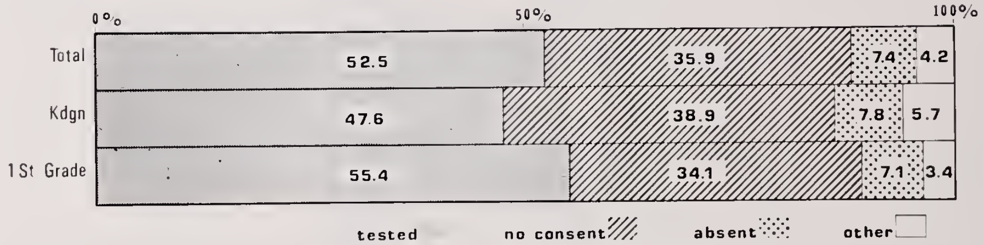

FIG. 2. Summary of tuberculin testing, school year 1967–1968.

Results of this new approach have already been felt. In the first 23 schools tested during the 1968–1969 operation our teams tested more than 68 per cent of total enrollment, compared with 55 per cent tested last year in the same schools. It is anticipated that the program will show an overall improvement in the current year.

Summary

Tuberculin skin-testing of school-enterers was started in November 1967. All 159 designated schools, with 31,794 kindergarten and first-grade enrollees, were covered before June 1968. A total of 15,403 children, or 48.4 per cent, were tested and read, and 98 positive reactors were identified. The rate of infection was 0.6 per cent with the use of the jet injector and 5 mm. criteria.

Three new active cases of primary tuberculosis were discovered in schools, and all eligible children were put on chemoprophylaxis.

Associate follow-up yielded 5 more new active cases of tuberculosis among 469 associates examined. Ninety-two associates with positive reaction were put on chemoprophylaxis.

(*Continued on page 207*)

Colitis—Its Etiology, Diagnosis and Treatment

EMILE C. NASH, M.D.*

SYMPTOMS REFERABLE TO THE COLON, particularly diarrhea, are common complaints encountered by the practitioner. They may vary from the vague subtle symptoms of mild abdominal discomfort, bloating, and systemic complaints to a more dramatic picture of abdominal pain, diarrhea, and variable toxicity. The purpose of this paper is to present several cases exemplifying the varied etiology of colitis, methods of diagnosis, and therapy.

Case 1. R. H., Hospital No. A. This 21-year-old Negro male was apparently well until 1 year prior to admission. He noted the insidious onset of diarrhea with the passage of watery stools mixed with dark red blood. The number of bowel movements ranged from 20 to 30 daily. Defecation was preceded by cramping periumbilical pain relieved by bowel movements. He had experienced a 20-pound weight loss. Weakness, easy fatigability, and exertional dyspnea were noted for 2 months.

The temperature, pulse rate and respiration were normal. The blood pressure was 124/50. Except for hyperactive bowel sounds there were no physical findings related to the abdomen. There was edema of both lower extremities. The hematocrit was 26 per cent. Serum albumin was 3 Gm. per cent. Stool examination revealed trophozoites of *Entamoeba histolytica.* Barium enema examination was normal. Sigmoidoscopy revealed edema, granularity, and intense friability of the mucosa. Biopsy revealed ulcerations and infiltration of the mucosa with mononuclear and eosinophilic cells. *Entamoeba histolytica* were seen in the ulcers (figure 1).

Comment. Although fecal examination revealed *Entamoeba histolytica* this case also exemplified the point that the parasites are frequently demonstrable in the tissues. Rapid subjective and objective improvement followed amebacidal therapy. The rectal and sigmoid mucosa had reverted to normal at the end of 3 weeks of therapy.

Case 2. J. B., Hospital No. B. This 20-year-old Negro woman was admitted to the hospital on March 14, 1967 complaining of the daily passage of 4 to 5 brownish liquid stools for 3 weeks. There was no blood. She had experienced a 10-pound weight loss.

Physical examination revealed a well-developed young woman appearing apprehensive. The temperature was 102°F. Pulse and respiratory rates were normal. There was tenderness over the descending colon. The hematocrit was 38 per cent. The total white blood cell and differential counts were normal. The urinalysis and stool examination for ova and parasites were negative. Proctosigmoidoscopy revealed a normal rectal mucosa, but the mucosa of the lower sigmoid was edematous and friable with many ulcers measuring 2 to 6 mm. in diameter. Biopsy of the sigmoid revealed acute inflammatory reaction with ulcerations. Amebae were not demonstrable. Barium enema examination revealed large mucosal ulcerations and polypoid filling defects in the transverse, descending and sigmoid colon.

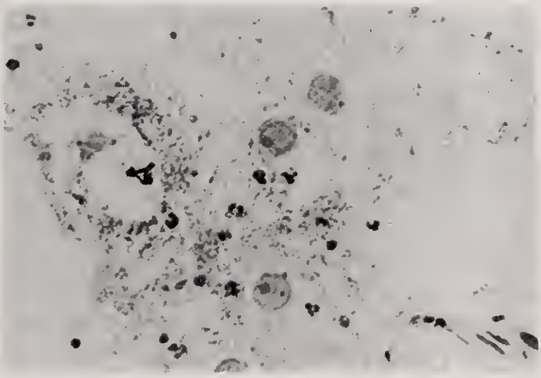

FIG. 1. *Entamoeba histolytica* in center of section.

One week after hospitalization the patient developed pyodermic lesions on the posterior surface of neck and an erythematous rash on the anterior chest wall. In spite of the negative studies for parasites amebacidal therapy was given for 21 days with no response.

Comment. This case fulfilled the criteria for the diagnosis of idiopathic ulcerative colitis. The failure to respond to amebacidal therapy, the skin lesions, and the subsequent chronic course give additional support for the diagnosis.

Case 3. J. B., Hospital No. C. This 35-year-old Negro male was apparently well until 10 days prior to hospitalization. He had had 4 to 6 soft stools daily. On several occasions the stools were well mixed with dark red blood. He had lost an unknown amount of weight. He was a well-developed young man in no apparent distress. The temperature was 102°F. The pulse and respiratory rates were 116 and 24 per minute respectively. Examination of the chest revealed dullness, and diminished excursions and breath sounds over the entire right side. Abdominal examination revealed no abnormalities.

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* Chief Medical Officer, Howard University Medical Service, District of Columbia General Hospital, Washington, D. C. 20003.

Hemogram and urinalysis were normal. Acid-fast bacilli were found in the sputum, gastric washings, and feces. Cultures of sputum and gastric secretions were positive for *Mycobacterium tuberculosis.* No ova or parasites were seen on stool examination. Barium enema examination indicated ulcerative colitis involving the entire colon. Chest X-ray films revealed an extensive infiltration in the left upper lobe and a pleural effusion on the right. Proctosigmoidoscopy revealed edema, hyperemia, granularity, and friability of the mucosa of the rectum and sigmoid. No ulcerations were observed. The biopsy was interpreted as chronic ulcerative colitis. There were no giant cells or caseation, and stains for acid-fast organisms were negative. Cultures of the specimens were negative for *Mycobacterium tuberculosis* and fungi.

Comment. In view of the pulmonary pathology it seems certain that the pathology in the colon was tuberculosis. The presence of acid-fast organisms in the feces may have been the result of swallowing tuberculous latent sputum. The absence of granuloma in the biopsies and the failure to culture specific organisms from the specimens were interesting. However, the rapid resolution of lung and bowel lesions after instituting antituberculous therapy gives strong support for the diagnosis of tuberculous colitis.

Case 4. J. C., Hospital No. D. This 38-year-old woman experienced severe cramping pain in the right lower quadrant of the abdomen for 4 days. There was nausea but no vomiting. She had experienced anorexia for 1 week, and there had been a 13-pound weight loss in 1 month.

Physical examination revealed tenderness and rigidity in the right lower abdominal quadrant. There was a painful, firm, nodular mass with ill-defined borders in the right lower quadrant. There was a leukocytosis of 13,000 with 94 per cent polymorphonucleated cells. Barium enema indicated a periappendiceal abscess or carcinoma of the cecum.

Abdominal exploration revealed an 8 cm. firm mass apparently arising from the cecum. The impression was carcinoma of the cecum, and a right hemicolectomy with ileotransverse colostomy was performed. Microscopic examination revealed a chronic periappendiceal abscess showing a colony of Actinomyces (figure 2). The patient received large doses of penicillin for several weeks and continued to show marked improvement.

Comment. This case represents actinomycosis of the cecum and appendix. It exemplified the difficulty in excluding carcinoma.

Case 5. E. S., Hospital No. E. A 52-year-old Negro woman was well until 24 hours prior to admission when she experienced persistent cramping, lower-abdominal pain. Within a few hours she began passing innumerable watery stools mixed with blood. Several chills were experienced.

The temperature was 100°F, and the pulse rate was 100 per minute. Abdominal examination revealed generalized tenderness. Stool cultures were positive for *Shigella flexneri.* Proctosigmoidoscopy revealed a hyperemic and friable mucosa. Biopsy revealed a nonspecific proctitis and mucosal erosions. Culture of the specimen was positive for *Shigella flexneri.*

In addition to parenteral fluids and symptomatic therapy the patient received tetracycline, 500 mg. every 6 hours orally. She was asymptomatic 4 days after beginning therapy, and the mucosa of rectum and sigmoid had a normal appearance.

Comment. The clinical picture was highly indicative of bacillary dysentery which was confirmed by appropriate bacteriologic studies. The effectiveness of broad-spectrum antibiotics was exemplified.

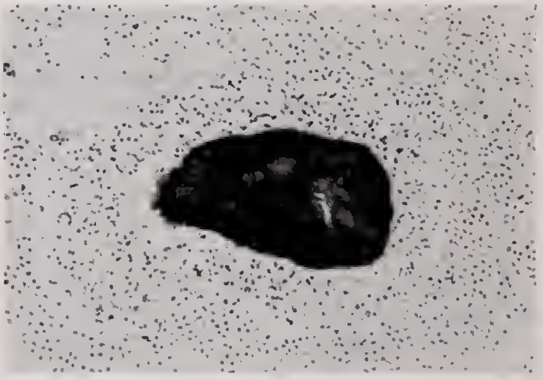

FIG. 2. Actinomyces is clearly depicted in center of section. There is a surrounding inflammatory reaction.

Case 6. M. M., Hospital No. F. This 65-year-old Negro woman was found to have carcinoma of the cervix approximately 1 year prior to admission. She had received radiation therapy daily for 6 weeks. Approximately 6 months later she experienced bloody diarrhea. This persisted and she subsequently noted feces in her urine. The only significant physical finding was tenderness over the descending colon.

The hematocrit was 10 per cent, and the total white blood cell count was 13,700. Urinalysis revealed a 3+ proteinuria and numerous red and white blood cells. Stool examination was negative for ova and parasites. Proctoscopic examination revealed an edematous, extremely friable and ulcerated mucosa. Biopsy was not obtained, and no fistula was identified. Barium enema was normal.

Comment. Factitial proctitis is rather frequent following radiation therapy to the pelvic organs.

The failure to demonstrate a fistula by barium enema or proctoscopy is not unusual. However, the history of passing feces in the urine left no doubt about the existence of a colovesical fistula.

Discussion

Six cases representing the variable etiology of colitis have been presented. Once the diagnosis of colitis is substantiated the etiology must be established in order to institute appropriate therapy.

Amebic colitis. The standard method of diagnosing amebic colitis is microscopic examination of feces or exudates from bowel lumen or from ulcers, when present, during proctosigmoidoscopy. The examination must be carried out at once and repeatedly if initially negative. The trophozoite of *Entamoeba histolytica* is easily identified in most cases.

A normal saline suspension of feces is satisfactory. The most satisfactory specimen is a sample taken from a loose stool or that following a saline cathartic. A suspension of exudate obtained during proctosigmoidoscopy may be even more informative. The zinc sulfate flotation technique[1] is another method which has improved the accuracy of stool examination. Anderson et al[2] have used hematoxylin-stained smears and consider this method highly accurate in the differentiation of *Entamoeba histolytica* and *Entamoeba coli*. The stains are also permanent.

Culturing *Entamoeba histolytica* is indicated only in those cases in which more conventional methods fail. Animal inoculation as a method of diagnosis is too expensive and time-consuming for routine use.

Rectal biopsy is of diagnostic value as exemplified by case 1. Yiotsas and Doxiades[3] reported that this procedure reveals *Entamoeba histolytica* with twice the frequency of microscopic examination of stool specimens. The value of rectal biopsy was further corroborated by the work of Candreviotis,[4] who was able to demonstrate amebae in colon tissues by fluorescent microscopy in the absence of gross evidence of inflammation. These studies were particularly rewarding in cases with chronic dyspeptic symptoms without diarrhea. Rectal biopsy should be done before excluding the diagnosis of intestinal amebiasis. This is especially important when there is a question of amebic granuloma or ameboma in the lower sigmoid or rectum. Ameboma occurs most frequently in the cecum, and reliance must be placed on demonstrating amebae by standard methods, rapid response to amebacidal therapy, or microscopic study of tissue obtained at laparotomy.

The treatment of intestinal amebiasis begins with prevention. The education of the public in proper personal hygiene is of paramount importance. Prompt diagnosis of symptomatic and asymptomatic cases followed by prompt and adequate therapy are important in controlling its spread. The value of this policy is even more obvious when it is recalled that the disease may herald its onset with such life-threatening complications as bowel hemorrhage, perforation, or serious extra-intestinal involvement, such as amebic abscess of the liver, brain and lung.

If the attack is characterized by fever, diarrhea, and abdominal pain, adequate quantities of appropriate fluids must be administered parenterally to combat dehydration and electrolyte imbalance. The use of Lomotil® or an anticholinergic drug gives symptomatic relief of abdominal discomfort. The diet must be bland and high in proteins. Anemia will require blood transfusions. Several amebacidal drugs are available.

In the acute phase intramuscular emetine hydrochloride in a daily dose of 0.065 Gm. for 4 to 10 days should be instituted at once.[5, 6] Patients receiving emetine should have frequent blood-pressure and pulse-rate determinations and electrocardiograms for evidence of drug toxicity. Emetine therapy must be followed without interruption by a course of one of the arsenicals and then one of the halogenated hydroxyquinolines.[7] Of the arsenicals, carbarsone, 0.25 Gm. twice daily for 10 days, may be used. Vioform®, a halogenated hydroxyquinoline, 0.25 Gm. 3 times daily for 10 days, is effective. Liver and kidney disease contraindicate carbarsone therapy.

A course of one of the arsenicals (Milibis® or carbarsone) or halogenated hydroxyquinoline compounds is preferred in asymptomatic intestinal amebiasis. Other hydroxyquinoline compounds include Diodoquin® and chiniofon. Broad-spectrum antibiotics have been used in intestinal amebiasis with variable results. Humatin and fumagillin are also effective.

Idiopathic ulcerative colitis. This is a serious inflammatory disease of unknown etiology. It usually has its onset in young adults in the age-range of 20 to 40 years, although no age-group is exempt. Diarrhea, abdominal pain, and the presence of blood in the stools should direct attention to the colon. The rectosigmoid is involved in 85 to 90 per cent of the cases, and proctosigmoidoscopy renders the diagnosis possible in most cases. At times the patient is so ill or the rectum so painful that an infant type of proctoscope will have to be used. Barium enema examination is necessary to determine the extent of the disease and to detect those cases without rectal and lower sigmoidal involvement. Specific bacterial and parasitic causes must be excluded.

Treatment is primarily medical. Surgical management is indicated for dangerous complications and in those cases in which response to prolonged medical management is poor. The emphasis which Kirsner[8] places on the reversibility of pathologic changes in ulcerative colitis should encourage a vigorous medical approach to this problem.

Of fundamental importance in medical management is rest of mind, body and bowel. Hospitalization is necessary at some time in most patients. Sedatives or tranquilizers are important for promoting rest. Anticholinergic drugs may be used for the abdominal pain and diarrhea, but their effectiveness is frequently unpredictable. In unusual cases opiates may be necessary but must be used with caution to avoid addiction or masking a perforation.

Maintenance of fluid and electrolyte balance are of the utmost importance. Frequent determinations of serum Na, K, Cl, CO_2, BUN, hematocrit, proteins, and prothrombin time are imperative. Any deficits must be corrected by appropriate replacement. Since large quantities of proteins are lost in the stools, parenteral protein replacement is necessary. Blood transfusions are indicated for the anemia and protein replacement. Vitamin supplementation is also indicated.

In the acute phase nausea and vomiting may be prominent, and all medication and food by mouth must be interdicted. With improvement, liquid diet without stimulants may be resumed with a gradual progression to a high-protein, bland diet. Penicillin and streptomycin are indicated in the presence of high fever, toxicity, and suppurative complications.

Chemotherapy is indicated in some cases. Azulfidine® seems most effective. Bargen[9] first used it in the United States in 1948, and the results have been encouraging. Side-effects such as anemia, nausea, vomiting and dizziness may require reduction of the dosage or withdrawal for a few days.

Corticotropin and adrenal steroids are useful adjuncts if administered appropriately and under careful surveillance.[10] These agents do not cure ulcerative colitis but may induce a clinical remission in seriously ill patients when used in conjunction with conventional therapy. They are indicated in life-threatening acute or relapsing phase of the disease, failure to respond to conventional measures, and in the face of systemic complications such as iritis, skin lesions, and rheumatoid arthritis. Undesirable and occasionally serious side-effects are associated with their use.

Aqueous ACTH, 10 to 20 units in 500 c.c. of dextrose in water intravenously every 12 hours is the preferred method in critical situations. Thirty units of aqueous ACTH may be given intramuscularly every 6 hours. If the need is less urgent 40 units of ACTH gel may be given intramuscularly every 8 hours. As symptoms improve the ACTH may be gradually reduced and oral adrenocortical steroids, such as prednisone, prednisolone, Medrol®, etc., may be substituted with graduated increments. Mild to moderate disease limited to the left colon and rectum will respond favorably to local steroid therapy in the form of retention enemas.

Tuberculous enteritis. Case 3 probably represents tuberculosis of the colon and rectum secondary to well-documented pulmonary tuberculosis. Many histopathologic features such as epithelioid cells, caseation, giant cells, and acid-fast bacilli were absent, but this may have been the result of an imbalance between the virulence of the organism and allergic reaction of host.[11]

The case may be classified as secondary enteric tuberculosis. Paustian[12] stated that one of the following criteria is essential for the diagnosis: (1) animal inoculation or culture of suspected tissue resulting in growth of the *Mycobacterium tuberculosis*, (2) the histologic demonstration of the bacilli in the lesion, (3) the histologic evidence of tubercles with caseation necrosis, and (4) typical gross operative findings with a biopsy of a mesenteric lymph node showing histologic evidence of tuberculosis. In the absence of complications such as obstruction, perforation (free or confined with abscess formation), or diagnostic uncertainty which require surgical treatment, therapy is principally that of the pulmonary tuberculosis.

Actinomycosis. The cecum and appendix are the most common sites of actinomycosis. Palumbo[13] reviewed the literature in 1948 and collected 62 cases of actinomycosis of the bowel. Most cases involved the cecal area and terminal ileum. Involvement of the rectum may be primary, presenting as a perianal or ischiorectal abscess, or it may be secondary to an intra-abdominal focus.

The outstanding symptom of cecal involvement is aching right lower quadrant pain. Examination reveals a tender hard mass in the right lower abdominal quadrant simulating a malignant neoplasm or ruptured appendix, eventually leading to laparotomy. Rectal actinomycosis is manifested by purulent fecal discharge. Diagnosis depends on isolating the *Actinomyces bovis* from tissues. Penicillin in large doses for long periods is the treatment of choice.

Shigellosis. In shigellosis, diarrhea with the passage of mucus and pus clearly indicates the need for a proctosigmoidoscopy. Initially the mucosa of rectum and sigmoid is red and edematous. Within 24 to 48 hours after the onset the mucosa becomes ulcerated and friable. During the proctosigmoidoscopy, specimens may be obtained for bacteriologic study and the diagnosis confirmed. Treatment includes correction of fluid and electrolyte imbalance and broad-spectrum antibiotics. Ampicillin is the drug of choice.[14]

Factitial proctitis and colitis. These result from injury induced by radiation therapy of cancer of the uterus, prostate or bladder. It occurs after the use of radium, supervoltage or conventional X-ray therapy, cobalt or radioactive cobalt.

Case 6 exhibited several of the usual features of factitial proctitis. The symptoms begin within several weeks or years after the completion of therapy. The bloody diarrhea, evidence of fistula, and the proctoscopic findings in the case were indicative of the diagnosis. Endoscopic features not exhibited were induration and telangiectasis which usually occur late in the course of the process. Barium enema examination is indicated to delineate the lesions above the reach of the proctosigmoidoscope.

Treatment may be divided into prophylactic, medical, and surgical. Prevention requires maximal safe radiation dosage properly spaced. Protection of other tissues with lead shields and barium paste is of paramount importance. Medical treatment for the most part is expectant and supportive. Infection will require appropriate antibiotics. Blood transfusions will be necessary for bleeding and anemia. Nutritional deficits must be corrected by adequate oral and/or parenteral feedings. Good results with topical application of hydrocortisone have been reported.[15] Such complications as obstruction, perforation and fistula will require surgical procedures, particularly if there is no evidence of residual cancer. Such procedures include closure of perforation, colostomy, ileostomy, bowel resection, and drainage of abscesses.

Other forms of colitis not exemplified in this manuscript are lymphogranuloma venereum, pseudomembranous enterocolitis, schistosomiasis, balantidiasis, and trichuriasis.

Lymphogranuloma venereum. This is a specific venereal disease caused by the large virus, *Miyagawanella lymphogranulomatis.* It is contracted mainly by sexual intercourse. However, the disease has occurred among research workers, surgeons, and operating-room assistants carrying out their usual occupations.

From 5 to 21 days after sexual exposure the primary small herpetiform lesion appears. It may be single or multiple and generally disappears within 8 days. In the female the primary lesion is located in the vagina or cervix uteri, whereas the urethral meatus is the usual site in the male. The location of the primary lesion in these sites accounts for the predominance of rectal lesions and inguinal adenitis in the female and male respectively. Rectal involvement in the male should raise the suspicion of abnormal sex activities. About 3 to 6 weeks after the appearance of the initial lesion, particularly in the male, inguinal adenopathy, usually tender, appears.

After the initial phase the clinical expression of this disease is referred to the anorectal region. Constitutional symptoms referable to the skin, eyes, and joints are frequent. An early symptom is rectal bleeding with or without pus. As stricture develops, lower abdominal pain and distention are experienced. Constipation or alternating constipation and diarrhea are noted. Perirectal abscess and fistulae extending into the vagina, perineum and anterior abdominal wall develop in a significant number of cases.

Physical examination may be unrevealing. Inguinal adenopathy with or without scars is frequent. Fibrosis induration of the penis (Peyronie's disease) or an indurated ulcer with elephantiasis of the vulva (esthiomene) may be noted. During the early phase of rectal involvement digital examination may be unrevealing. Later, stenosis of varying degrees will be detected.

Extra-colonic physical findings include conjunctivitis, retinal edema, papilledema, opalescence of the cornea, and such skin lesions as erythema and urticaria. Erythema nodosum and arthralgia have also been noted.

Proctosigmoidoscopy will reveal an edematous, friable, ecchymotic, and ulcerated rectal mucosa covered with pus. Eventually only scarring of the mucosa with effacement of the valves of Houston will remain. Occasionally the stricture so occludes the lumen of the rectum that only an infant type of proctoscope can be used. Barium enema examination during the stenotic stage reveals a fixed and immobile rectum with a stricture varying from 4 to 25 cm. in length. Fistulous tracts communicating with contiguous structure or soft tissues are frequent. The intradermal Frei test usually becomes positive in 7 to 40 days after the onset of the adenitis. The complement-fixation test is also of value in diagnosis.[16]

The treatment of lymphogranuloma venereum is medical and surgical. Infection and obstruction constitute the main concern. Supportive measures include iron therapy or blood transfusions for anemia, bland diet, etc. Erythromycin, chloramphenicol, and the tetracyclines have been used with success.[17] The drugs are given in courses of 2 weeks. In the past, sulfonamides have been used with success also.[18] Response to these drugs may be expected only if there is no more than a moderate degree of rectal stricture.

Surgical therapy is indicated under the following circumstances: (1) destruction of the anal canal, sphincter and perineum, (2) rectovaginal or anal fistulae, (3) complete obstruction, and (4) infections uncontrolled by antibiotics. Colostomy and abdominoperineal resection constitute the procedures of choice.

Pseudomembranous enterocolitis. The etiology is controversial and there are probably multiple factors. The patient may or may not have undergone a surgical procedure, especially abdominal surgery. Hypoxia seems to be a factor either as a result of primary cardiovascular disease or as a part of the disease leading to an operation such as intestinal obstruction, anemia, and shock.[19]

It is inescapable that coagulase-positive *Staphylococcus aureus* must be considered important in the etiology. The resistance of these organisms increased with widespread use of broad-spectrum antibiotics.[20] Patients frequently have received these drugs prior to the onset of symptoms.

If the patient has undergone surgery, symptoms occur about the fourth or sixth day. There is a sudden rise in temperature with mental confusion, lethargy, abdominal pain and distention, diarrhea, and marked sweating. The diarrhea is explosive and continuous with or without blood. If there is severe ileus, diarrhea may not develop.

Proctosigmoidoscopy at this time may reveal a hyperemic, edematous, easily bleeding mucosa with a grayish or green membrane. Smear and cultures obtained from the mucosa may reveal staphylococcus for which sensitivity studies should be done.

Successful treatment of pseudomembranous enterocolitis depends to a large extent on early diagnosis. Any antibiotics being received should be immediately discontinued. ACTH has been of value in combating the enterotoxin of the staphylococcus.[21]

While awaiting the stool cultures and sensitivity studies, erythromycin, 500 mg. parenterally every 4 hours, has been of value.[22] Some of the recent antibiotics effective against staphylococcus will have to await further clinical trial.

During the acute phase of the disease all oral feedings are discontinued. The fulminating diarrhea is a threat to water, electrolyte, and acid-base balance. Careful assessment of the chemical and physical status of the patient is necessary at frequent intervals. Enormous quantities of appropriate parenteral fluids will be required. Plasma is also required for protein replenishment. Accurate fluid intake and output records are mandatory because compromise of renal function is a persistent threat. The mortality rate is high, and the prognosis is always guarded.

Schistosomiasis. As a result of migration of population and mobilization of military troops schistosomiasis is an important health problem in the United States. Infected persons may be asymptomatic. Although more frequent in schistosomiasis mansoni an intestinal phase may be manifested by persons infected with *Schistosoma japonicum* and rarely with *Schistosoma haematobium.* From several days to several weeks after penetration of the skin the patient experiences variable constitutional symptoms.

After several weeks or months bloody diarrhea develops. The diagnosis is easily established by stool examination. Proctosigmoidoscopy may reveal mucosal hyperemia, ulcerations, or even polyps. During the procedure a punch biopsy may be obtained and enhance the diagnostic accuracy.[23]

The treatment of schistosomiasis is controversial. This pertains to the relative effectiveness of the various drugs and in some instances the wisdom of treatment at all. The latter contention is that the toxicity outweighs the benefits. The following drugs are commonly used: (1) potassium antimony tartrate (tartar emetic) and sodium antimony tartrate, (2) sodium antimony III biscathecol disulphonate (neoantimosan), (3) antimony dimercaptopotassium succinate, (4) thioxanthone derivatives (Miracil D), and (5) sodium antimony gluconate. Since space will not permit detailed description of dose schedule the reader is referred to several publications for this information.[24, 25, 26]

Balantidium coli and *Trichuris trichiura* will produce a colitis with the usual symptoms. The diagnosis is established by demonstrating the trophozoites of *B. coli* and the eggs of *Trichurus trichiura* in the stools. The drugs of choice in these entities are oxytetracycline and dithiazanine iodide respectively.[27]

Summary

Six cases of colitis have been presented. The cases were classified etiologically as amebic, idiopathic, tuberculous, actinomycotic, shigella, and factitial. Methods of diagnosis and treatment of each type were discussed. The clinical features and therapy of other types of colitis were also described. Exact etiologic diagnosis is essential for appropriate therapy, prognosis, and public-health implications.

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Case-finding in Venereal Disease—Freeman

(*Continued from page 186*)

In areas where pinta is common there is little syphilis; if pinta is wiped out syphilis becomes prevalent. This research is directed to develop methods of growing large numbers of pinta organisms in animals, then in tissue cultures. Weakened strains of pinta would then be developed from which the vaccine would be made.

Dr. Edward Jenner, in the 18th century, used cowpox virus to protect humans from smallpox without giving them the disease. Similarly, it is hoped, protection against syphilis can be developed with a vaccine from the organism of pinta.

We continue to find every case we can, since this removes the source of infection from the community. Those that are missed may eventually receive penicillin for some other ailment, resulting in treatment for their unknown syphilis. Thus the debilitating sequelae are eliminated or largely curtailed, and, hopefully, eventually the insane asylums and the cardiac hospitals will be free from caring for these invalids and relieve us of the responsibility of supplying millions of dollars for the maintenance of this segment of our population.

Although the number of cases of early infectious venereal diseases cannot be determined by any measuring device now available to us, I am convinced that this group of undetected cases is large. In attempting control through case-finding, all phases of the program should be accelerated—education, private-physician coöperation, epidemiology, and public relations. As an ever-increasing number of infectious patients are found with the augmented and accelerated program, eventually we would hope to be reaching most of them. When this point is reached we should then begin to see a diminution in the number of cases, due not to failure in case-finding but to a true reduction in incidence.

Retropharyngeal Extension of Acute Pancreatitis

BELA GONDOS, M.D.,* AND THOMAS F. SNEED, M.D.†

ACUTE PANCREATITIS may be an aggressively expanding disease by virtue of enzymatic activity of the pancreatic juice. Intrathoracic involvement, manifested in basal pneumonitis and pleural effusion, is well known. Extension of a pancreatic pseudocyst into the posterior mediastinum[1-4] and into the neck[5] may also occur. Moreover, recent reports indicate the occasional involvement of distant structures probably produced by the activity of pancreatic lipase transmitted by the circulation.[5-10] In this paper we are presenting the case history of a patient with extension of an acute pancreatitis into the retropharyngeal (prevertebral) space.

Report of a Case

The patient was a 39-year-old white woman who was admitted to the District of Columbia General Hospital on October 23, 1965 for the first time with the chief complaints of chest pain, dyspnea, orthopnea, and swelling of the ankles of 3 weeks' duration. Excruciating pain in the chest started suddenly 3 weeks prior to admission; it was more pronounced in the left subclavicular area with transmission to the back. The symptoms steadily increased. The patient had a history of approximately 10 years of heavy alcoholic intake. She smoked a pack of cigarettes daily and had a nonproductive cough for many years. There was no history of cardiac or pulmonary disease. Over the past few months the patient had lost 25 pounds. There was a decrease in appetite. There was an abortion with each of 4 pregnancies.

The patient appeared as a poorly nourished woman in moderate respiratory distress, sitting up in bed. The blood pressure was 110/80, the pulse rate 130, the respiratory rate 30, slightly labored, the temperature 98°F. There was a 1 cm. soft, nontender "cystic" movable mass in the lateral aspect of the right half of the neck over the sternocleidomastoid muscle midway between its origin and insertion. The patient stated that she had had this for at least 3 years, and she had been told that it was a sebaceous wen. There was cervical lymphadenopathy. Dullness to percussion was present at both bases with diminished fremitus and decreased breath sounds with moist rales over the same areas. There was tachycardia with no murmurs over the heart and no enlargement of the heart. The abdomen was distended and soft without tenderness. The liver was palpable just below the costal margin; it was soft and nontender. No abdominal mass was felt, and there was no fluid wave. There were no spiders or varicosity. Pelvic and rectal examinations were negative. Stool examination for occult blood was negative. There was 4+ pedal edema and no ulcers or varicosities.

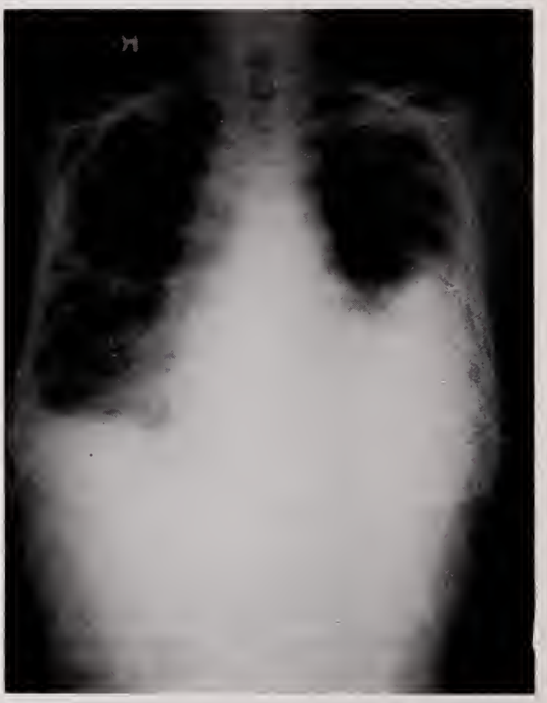

FIG. 1. Bilateral pleural effusion and widening of mediastinum, the result of thoracic extension of necrotizing pancreatitis.

The urinalysis was negative except for a trace of albumin, and on culture there was no growth. The hematocrit was 35 per cent. The white blood cell count was 13,500 with a shift to the left. The blood urea nitrogen was 40 mg. and the blood sugar 92 mg. The electrolytes were within normal limits. SGOT, LDH, bilirubin and thymol turbidity tests were all within the normal limits. Total protein was 5.7 Gm. with albumin 3.5 and globulin 2.2. The bromsulfalein test showed 10 per cent retention. The electrocardiogram showed sinus tachycardia with low voltage. A posteroanterior roentgenogram of the chest revealed widening of the mediastinal shadow and bilateral pleural effusion (figure 1). Diagnosis in the ward at this time was deferred with the possibility of bronchogenic carcinoma or lymphoma.

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* Program Director, Residency Training and Research, Radiology Division, District of Columbia General Hospital, Washington, D. C. 20003.

† Chief Radiologist, Yuma Hospital, Yuma, Arizona 85364; formerly Medical Officer, Radiology Division, District of Columbia General Hospital.

On October 24, 1965 a pleural tap was performed which produced several hundred c.c. of turbid, yellowish fluid. Smear for acid-fast bacilli was negative. Amylase value of the pleural fluid was 9,000, while the serum amylase at this time was 4,500. Lipase was also markedly elevated. On the basis of these findings a diagnosis of acute pancreatitis was made. The patient was treated with anticholinergic drugs and gastric suction. Venous pressure was 90 cm. water, and the circulation time was 10 seconds.

The hospital course was complicated by the rather sudden appearance of redness and heat in areas of both feet and ankles and the development of erythematous, elevated lesions over the lower extremities and right arm, considered "cellulitis," the cause of which was unknown. The temperature at this time was 100–101°F, and the white blood cell count was 15,600–14,200. Hematologic and bone-marrow studies were noncontributory. At about the same time rapid swelling developed in the right side of the neck which was unrelated to the previously described sebaceous cyst. The recent swelling was grossly located in the area of the right mandibular angle; it measured 5 by 3 by 3 cm. and was firm and nontender. Stensen's duct was not inflamed. The right side of the oropharynx was edematous, and on pressure the impression was obtained that a bilateral accumulation of fluid in submucosal localization was present. On direct and indirect laryngoscopy the wall of the hypopharynx seemed to be swollen toward the midline bilaterally. Nevertheless, there was no compromise of the airway. A diagnosis of retropharyngeal abscess was made. The possibility of an extension of the disease from the mediastinum was raised but was discarded. The nature of the cervical mass remained unexplained. The following day it was noted to have grown in size. At about this time the patient became febrile and deteriorated. Cultures of urine, blood, and pleural fluid were negative, as were gastric washings for acid-fast bacilli. Skin tests for tuberculosis, histoplasmosis, and coccidiomycosis were negative. An attempt was made to aspirate the mass with a needle through the right submandibular triangle, but no fluid was obtained.

Numerous pleural taps were performed and huge amounts of fluid, which were continually reaccumulating, were withdrawn. Pleural biopsy revealed no malignant cells or any granulomatous change. Serial chest films showed widening of the mediastinum, and a lateral view of the neck revealed a retropharyngeal mass (figure 2). Biopsy of the skin lesions and of the subcutaneous mass on the right side of the neck revealed necrotic tissue. The patient remained moderately dyspneic, agitated, and eventually confused. She died suddenly on the sixth of November, the fifteenth day after admission.

The final diagnoses before death were acute pancreatitis with subphrenic abscess and necrotizing mediastinitis. For the swelling in the neck the following possibilities were raised: (a) salivary gland infection followed by descending mediastinitis, (b) obstructing stone in the salivary duct, and (c) branchial cyst. After the appearance of the retropharyngeal mass on the roentgenogram abscess, hematoma and lymphoma also were suggested. Pancreatitis as an underlying cause was not seriously considered.

Pertinent findings on autopsy were:

1. Acute pancreatitis with widespread fat necrosis including the perirenal fat and left subphrenic abscess. Chronic pancreatitis and stones in the ectatic Wirsungian duct. No gallstones were found.
2. Massive fat necrosis of the mediastinal tissues. Abscess in the anterior and superior mediastinum.
3. Acute fibrinous pleuritis.
4. Cultures taken from the mediastinum showed Pseudomonas, species 1–2.

The neck and the extremities unfortunately were not examined on autopsy.

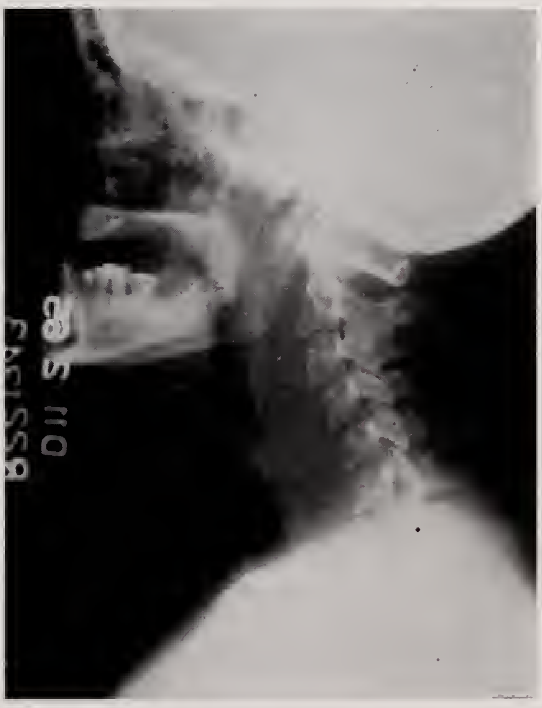

FIG. 2. Marked increase in the sagittal diameter of the retropharyngeal space due to extension of the necrotizing pancreatitis.

Discussion

The patient had an acute necrotizing pancreatitis which extended into the thorax producing bilateral pleural effusion and a necrotizing mediastinitis. The subsequent retropharyngeal abscess was obviously a direct extension of the mediastinitis into the retropharyngeal space. It presented itself as a retropharyngeal (prevertebral) space-occupying process as documented by roentgenographic and physical examination. The mass in the right side of the neck is considered a direct extension of this process. The necrotizing tissue obtained by biopsy seems to support this interpretation. The true nature of this complication and its relationship to the acute necrotizing pancreatitis remained unrecognized before the death of the patient.

Basal pneumonitis and pleural effusion as a complication of pancreatitis occur mostly on the left; less commonly they are bilateral, as in the present case. The pancreatic enzymes in the pleural effusion are present in a high concentration, and this is commonly higher than the values obtained from blood serum.[11, 12] Similar observations were made in the case presented in this paper. In association with the thoracic manifestations, the presence of subpleural, pericardial and mediastinal fat necrosis has been described.[6, 13] The fat necrosis in the thorax is produced by the pancreatic lipase, and it is probably transmitted from the abdomen through lymphatic channels. The probability that such a route of extension is in operation was experimentally demonstrated by Perry.[14] Intraperitoneal injection of a mixture prepared from a solution of pancreatin and a suspension of fine particles of graphite was employed in 25 large white rats. Autopsy revealed multiple areas of fat necrosis in the abdomen and in the thoracic cavity, while the graphite particles delineated the lymphatic channels. Five cases of pancreatic pseudocysts occurring in adults and presenting as a tumor in the posterior-inferior portion of the mediastinum have been reported. In 2 cases the communication between the pseudocyst and the abdominal disease occurred through the esophageal hiatus[1, 2]; in another case it extended retroperitoneally and then through the aortic hiatus.[3] In the fourth patient the pseudocyst was the result of a stab wound in the left upper quadrant of the abdomen. Following cholecystectomy, sphincterotomy and intubation of the pancreatic duct the pseudocyst rapidly disappeared.[4] A most recent report describes a pancreatic pseudocyst with fistulous extension into the neck.[5] The latter presented itself as a mass in the right submandibular region and was contiguous with the abdominal pseudocyst. The similarity of the submandibular manifestation to that in our case is striking.

The upward propagation of mediastinitis in our patient obviously utilized the same fascial plane as a retropharyngeal abscess does when it extends down into the mediastinum or when gas appears in the soft tissues of the neck following a perforation of the lower esophagus. The anatomic basis of this route is the fact that the retropharyngeal soft tissues represent a direct extension of the mediastinum. The digestive effect of the pancreatic enzymes is considered instrumental in the unusual progressiveness of this process manifested by the involvement of the retropharyngeal space. The incidence of this complication is not known. On the basis of this experience and of the report of Sybers et al[5] of a pancreatic pseudocyst in the neck, in future cases of thoracic extension of pancreatitis a lateral view of the neck also may be advisable.

The X-ray manifestation of the retropharyngeal process, i.e., the marked widening of the prevertebral (retropharyngeal) space, as seen on the lateral view of the neck, was a most interesting observation in this patient (figure 2). Widening of the prevertebral tissues on the roentgenogram may be present in several conditions. The following is probably an incomplete list of such conditions:

1. Retropharyngeal abscess, most commonly seen as a complication of an acute pharyngitis in the first 3 years of life. It also may follow a perforation of a foreign body or an osteomyelitis (pyogenic or tuberculotic) of the cervical spine.
2. Malignant tumors (metastatic carcinoma, multiple myeloma or lymphoma) of the cervical vertebrae.
3. Retropharyngeal hematoma, following injury[15] or due to hemorrhagic diathesis; this condition may also be iatrogenic following carotid artery puncture.[16]
4. Retro-esophageal extension of the thyroid gland.[17]
5. Subglottic hemangioma.[18]
6. Hygroma.[19]
7. Edema of the prevertebral tissues associated with cretinism.[20]

Confusion of normal prevertebral tissues with pathologic widening should be avoided. In infants the width of the retropharyngeal tissues is much greater than in adults and decreases with the age. In the first year of life it may reach 1.6 times the sagittal diameter of the body of the fourth cervical vertebra; in the second year it does not exceed the half of its diameter.[21] In adults it generally measures 2 to 3 mm. and does not exceed 5 mm. when the space between the anterior border of the midpoint of C-3 and the posterior wall of the pharynx is measured.[22] In infants the respiratory phase in which the film is taken is of importance. The measurement in the expiratory phase is considerably increased and may be a source of incorrect interpretation.[20, 23] Consequently the lateral view of the neck in children should be taken in deep inspiration. Because of the difficulty in obtaining good inspiratory films in infants and little children, cineradiographic studies in lateral view are also recommended for more correct evaluation of the retropharyngeal space.[24]

The elevated red nodules and "cellulitis" in the extremities deserve attention. Such manifestations have recently been reported in the literature in connection with acute pancreatitis in increasing numbers.[6-10, 25] Related surgical and autopsy observations showed "tissue necrosis" in the areas involved. A similar report after surgical biopsy was obtained in our case. It is believed that this necrosis is a "metastatic" phenomenon produced by the circulating pancreatic enzymes. Necrotic changes of bones manifested on roentgenograms by translucent and later sclerotic areas of the long bones have been reported.[9, 26] The lipase, as elsewhere, splits the neutral fat into glycerol and fatty acid, and the latter combines with calcium ions, producing calcium soap. An essentially similar mechanism of the necrotizing process is believed to operate in the subcutaneous fat tissue and produces the erythematous nodules.

Summary

A case of extension of an acute pancreatitis into the mediastinum and from there into the retropharyngeal tissues has been presented. The physical findings and X-ray manifestations in the neck were grossly similar to those of a retropharyngeal abscess. In cases of thoracic extension of acute pancreatitis a lateral view of the neck may be advisable as an additional procedure.

The technical help of Mrs. Ann Webster, Secretary, is acknowledged and greatly appreciated.

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Tuburculin Skin-testing of School-enterers—Khoury

(*Continued from page 196*)

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President's Page

PREVENTION OF CRIME DUE TO HEROIN DEPENDENCE

Heroin addiction has become a major problem in the city of Washington. Dependence on this illicit narcotic has become the way of life for 1,000 to 5,000 or more persons in this community. To support the "habit" the individual addict needs $50 to $150 cash a day. Because of physical and mental handicaps associated with the use of the drug he cannot earn this much money and must turn to crime for his funds. Aided by organized crime the addict may support his need by pushing drugs such as heroin, marijuana, etc. to youths of the city, thus creating more addicts and adding to the serious behavior problems of the teen-agers. For more income the addict may turn to other criminal activities—shoplifting, housebreaking, prostitution, armed robbery, etc. The cost to the public to support 1,000 addicts must be over $200,000 a day.

Dependence on heroin is incurable in 80 to 90 per cent of the cases even with prolonged use of the best medical techniques. The reason for the poor cure rate is not fully understood, but it may be because of inborn or acquired personality defects or deterioration caused by the effects of the drug. The hope of true permanent cure seems very remote at present. Completely eliminating the source of all addicting drugs is impossible. To stop the growing of poppies all over the world is an impractical project. Stronger enforcement of the laws dealing with narcotics is being planned and will help, but it will raise the cost of drugs, and the addict will have to get more extensively involved in crime to support his needs. Permanently confining all addicts is not a practical solution in this country. Substitution therapy with methadone in a maintenance program offers better social results than any other program tried to date.

Methadone used in substitution therapy programs offers a fair solution for the management of heroin-dependent cases. Methadone is an inexpensive addicting drug that prevents withdrawal symptoms without producing euphoria and does not interfere with physical and intellectual functions. To be useful the treatment must be combined with extensive social and economic rehabilitation programs. The addicts on methadone may need full financial support until they can find suitable employment. Many will need extensive education and job-training before becoming employable. All will need supervision for years, if not for the rest of their lives. Techniques of treatment introduced by Dr. Vincent P. Dole and Dr. Marie Nyswander of New York seem very promising. It is suggested that treatment centers be established where addicts may come in voluntarily for treatment. All persons arrested and confined for crime should be examined, tested, and observed for addiction, and those found to be addicts started on treatment during confinement and on release assigned on a probationary basis to a treatment center. They should be followed as long as necessary. Those who fail, i.e., discontinue therapy, resume the use of heroin, or are apprehended for crimes, should again be confined and on release again assigned to a treatment center.

The substitution treatment will not cure the addicts but it should rapidly decrease the pool of peddlers, reduce the crime rate in the city, and develop many useful citizens.

The cost of such programs though great will be small in comparison to losses from crime suffered by the public at present.

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Neo-Synephrine® HCl 0.5%, a decongestant of unexcelled efficacy (in full adult strength) to shrink nasal membranes and allow comfortable breathing.

Thenfadil® HCl 0.1%, a topical antihistamine to help relieve itching and rhinorrhea.

Zephiran® Cl 1:5000, an excellent wetting agent and antiseptic preservative to aid rapid spread of components.

NTz, for temporary relief of nasal symptoms, is well tolerated, but overdosage should be avoided.

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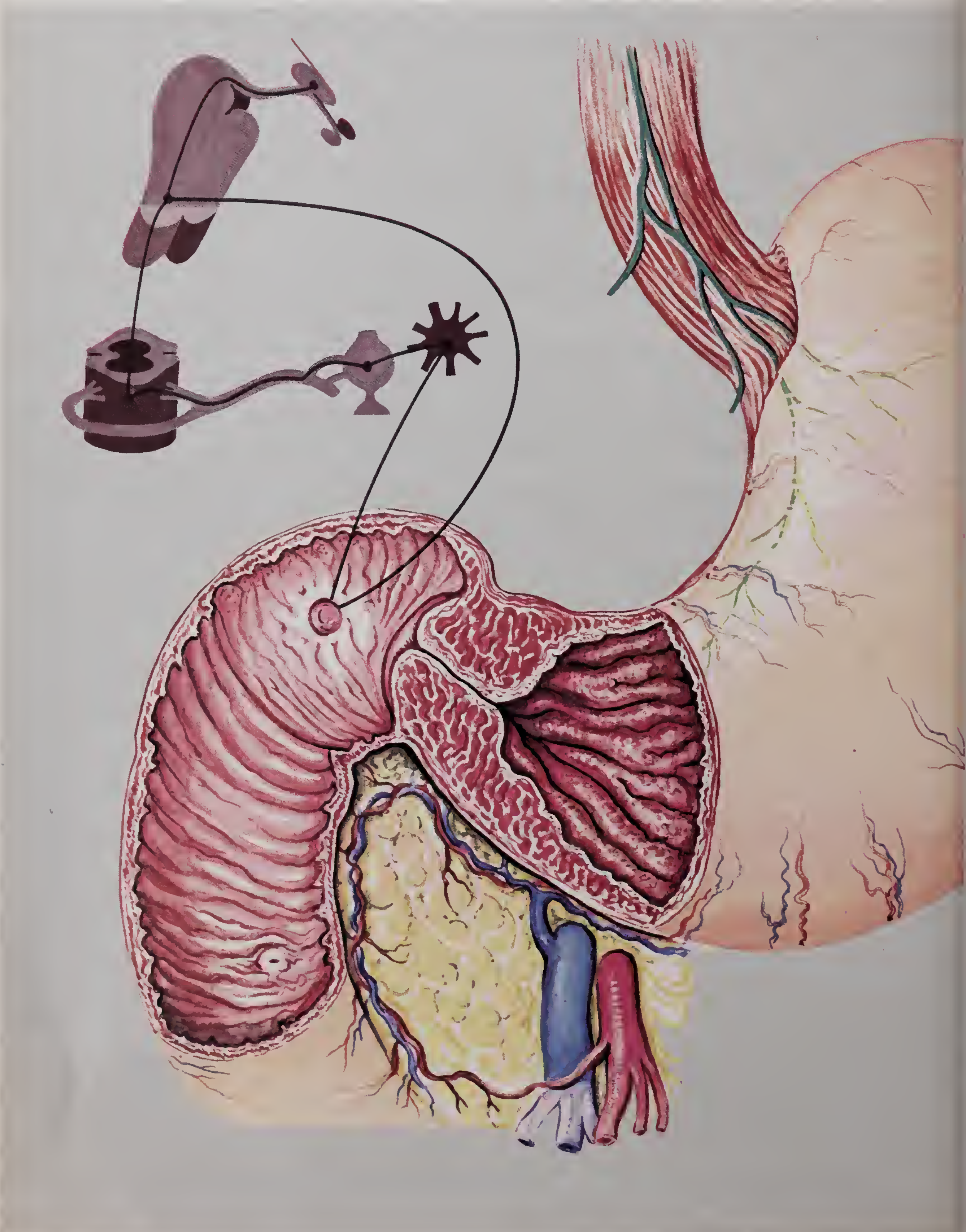
Healing the ulcer crater



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Indications: Peptic ulcer, gastroenteritis, pylorospasm, biliary dyskinesia, functional hypermotility and irritable colon.
Contraindications: Glaucoma, severe cardiac disease.
Precautions: Since varying degrees of urinary hesitancy may occur in elderly men with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.
Side Effects: The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.
Dosage: The maximal tolerated dosage is usually the most effective. For most adult patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type vials of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

981 4/69

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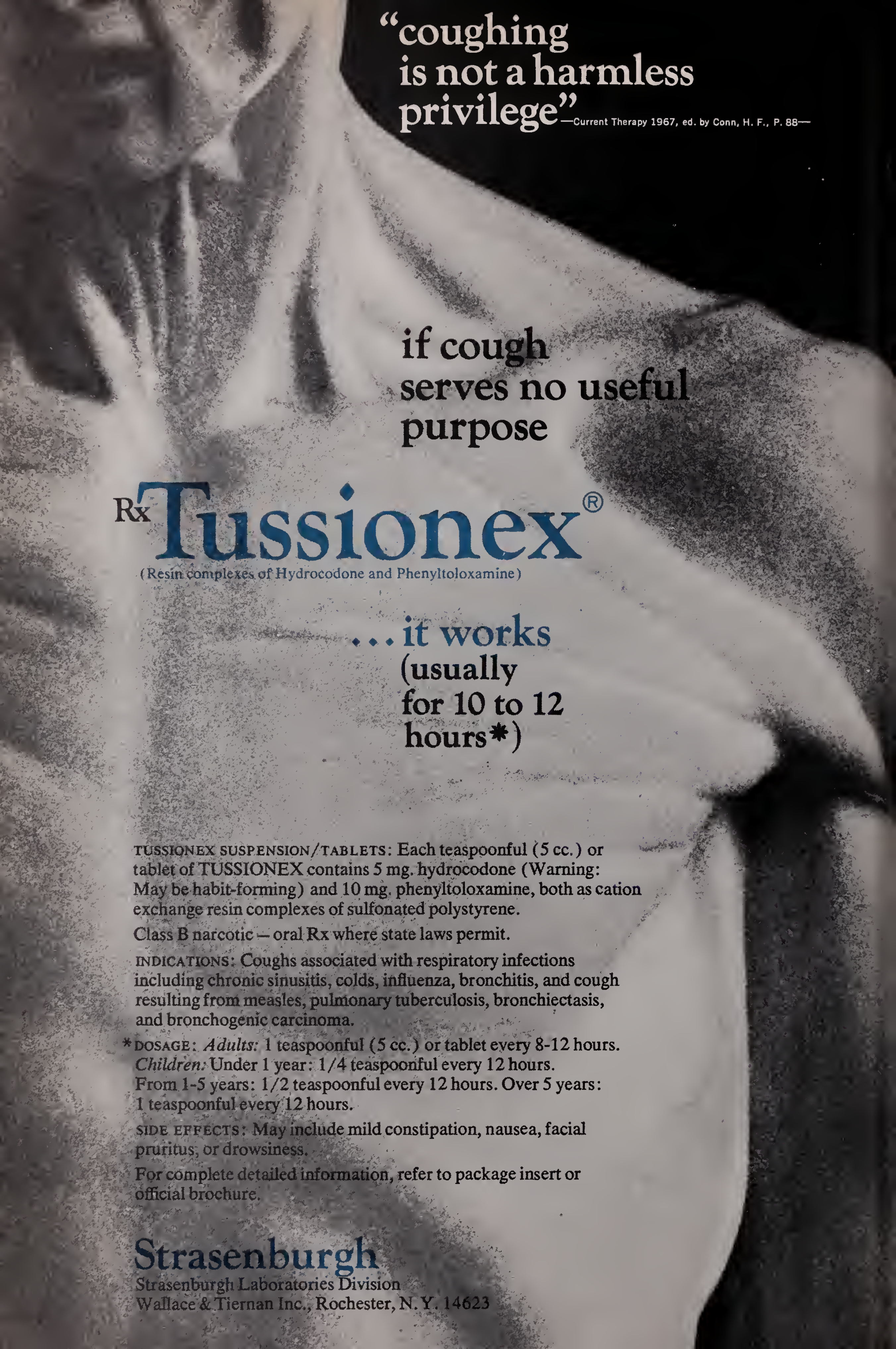

"coughing
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Editorials

People and Money Needed for Cancer Research

Despite the complexity of the cancer problem, there have been major advances that have enabled physicians to treat their patients more effectively. The gains are reflected in the overall statistics:

- In the early 1900's few cancer patients had any hope of cure.
- The 5-year survival rate in the early 1930's was about 1 in 5; 10 years later, 1 in 4; currently, about 1 in 3.
- There are more than 1.5 million Americans alive today who, 5 years after diagnosis, show no evidence of the disease.
- And this year it is projected that about 205,000 Americans will escape death from cancer.

The American Cancer Society makes a strong and quite tenable plea for the saving of many more lives through the vigorous application of the knowledge now available.

Today we have a clearer perspective on the cancer problem and a more definite conception of the needs and opportunities. Certainly we are doing a lot of research. It takes money, it takes people, and while money without people can't do it, it certainly makes a contribution. During the last year the Society's Board of Directors awarded $17,000,000 in research grants. A lot of money—yes, but the ACS Research Advisory Council had approved grants totaling $24,000,000. Thus $7,000,000 of needed research could not be supported.

Over the last 10 years we have learned more about the structure and the makeup and the function of living matter than in all previous years. Much of our research has gone and has been concerned with the individual cancer cell, the basic biological unit, of which we have some hundred billions in our bodies. We have found out that the normal cell changes to a cancer cell at the cell level without the need of the whole organism or its many reactions, and it gives its characteristics to its offspring. So it is on this level and it is for this reason that we have been so interested in what happens in the cell.

In this area of research the American Cancer Society has awarded many grants, including 3 here in the Nation's Capital, totaling $213,647, to Georgetown and Howard Universities.

A grant of $108,032 went to Dr. Gunther F. Bahr, Clinical Associate Professor of Pathology at Georgetown University. Dr. Bahr is seeking to perfect ways of using the electron microscope in probing the interior of cells. Hopefully, this research could help verify the cellular events leading to cancer. Dr. Mark E. Smulson, Assistant Professor of Biochemistry in the Schools of Medicine and Dentistry, has been awarded $65,900 to study the regulation of ribonucleic acid (RNA) in the cells of mammals. RNA is a chemical messenger that carries coded instructions to the protein-building portions of the cell. Dr. Smulson hopes to find out what mechanism controls the production of both normal and malignant tissues.

A grant of $39,647 went to Reuben L. Kahn, Ph.D., College of Medicine, Howard University, to study the "irradiation effect on tissue-localized injected substances."

The types of cancer which are probably most vulnerable to the newer knowledge at hand are acute leukemia, Hodgkin's disease, Burkitt's lymphoma, lung cancer, uterine cancer, and choriocarcinoma. These diseases are either preventable, as is probably true for much lung cancer, or could be cured in more patients than are now saved, as in choriocarcinoma through the use of drugs.

Much cancer research being carried out in this country could be termed "cancer virology." Congress in 1964 provided supplemental funds to support special programs, complementing the extensive research in this field which is financed through the regular grants mechanism. The main objectives of these programs are:

1. To devise effective means for the treatment of cancer in man.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

2. To determine whether viruses comparable to those now known to cause cancer in laboratory and domestic animals are the causal agency in human cancer.

3. To develop an effective vaccine or other means for the prevention of these diseases if such etiologic agents are revealed.

Much cancer public education that is being carried out this month could be termed "massive." This month more than 2,300,000 volunteers in this area and throughout the country are calling on their neighbors to give them lifesaving information on how they can better protect themselves from this disease.

This massive Crusade-Education Campaign is an all-out effort to reach the more than 103,000 Americans who will die needlessly this year unless they heed the advice given them by the American Cancer Society. With the outstanding and dedicated support given by our scientists, physicians, dentists, and laymen toward reaching the goals of the American Cancer Society, let us persevere.

LaSalle D. Leffall, Jr., M.D.
Vice President, District of Columbia Division, American Cancer Society

Diabetes Association Enlarges Scope of Activities

The Diabetes Association of the District of Columbia, in keeping with the enlarged scope of its activities, has changed its name to the Diabetes Association of the Washington, D.C. Metropolitan Area, Inc.

For nearly 25 years the Association has sponsored an Annual Diabetes Detection Campaign to disseminate knowledge about diabetes to the general public. During this period the Association makes available to the public free testing of urine for glucose. During 1968 more than 110,000 test kits were distributed and more than 300 new diabetics were recognized. Public meetings are held during each year with recognized authorities on diabetes as speakers.

Within the past 2 years a counseling service has been organized to give practical and helpful advice to the newly recognized diabetic or his parents. This service does not include treatment. The Association operates with the coöperation of the D. C. Dietetic Association.

Within the past 3 years the Diabetes Association has become actively involved in financially supporting the construction of Camp Glyndon, the new $500,000 camp for diabetic children, which is located on a 44-acre tract near Reisterstown, Maryland.

As newly reorganized, the Association combines a general membership and a professional section; the latter group of physicians hold regular meetings for the discussion of subjects in the field of diabetes mellitus. They also act in an advisory capacity to the general membership.

Recently the following officers were elected: Dr. Thomas W. Wilson, President; Dr. Max G. Sherer, First Vice President; and the Reverend Jesse Gibson, Second Vice President. The Association's address is P.O. Box 4384, Washington, D. C., telephone 585-1930. Dr. E. Clarence Rice is Executive Director.

Max G. Sherer, M.D.
Chairman, Professional Section,
Diabetes Association of the
Washington, D. C. Metropolitan Area

Foreign Objects Left in the Patients*

It is well-known in the medical profession that legal problems are very likely to develop if foreign objects are unintentionally left within the body of a patient during treatment. Elaborate precautions have been developed to forestall such incidents. Nevertheless, this kind of medical error remains among the most common sources of litigation affecting physicians.

The kinds of objects and the nature of the medical procedures involved in these incidents are almost limitless in their variety. Most of the incidents, of course, arise out of surgery. The most common objects are sponges or surgical instruments. A catalogue of the objects which have been or may be involved and the procedures in which the incidents have occurred or may occur would be virtually impossible to compile. Probably, it would also be of little value to the physician.

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* Reprinted from "The Best of Law and Medicine, '66–'68" by permission of the Law Division of the American Medical Association. Copyright, 1968, American Medical Association.

It is of little practical value to warn physicians to be careful not to leave objects in their patients' bodies. No physician does so intentionally without a good medical reason. If he has a good reason, the legal problems are not of great significance.

Unless medical justification is established, the law assumes that there has been carelessness on the part of the physician if a foreign object is found in the body after treatment. This makes it easier for the patient to recover damages.

The frequency of these incidents seems to indicate that some further preventive measures should be developed. Existing mechanical and procedural safeguards do not seem to be enough. Perhaps the most effective remedy would be to develop among physicians a subconscious alertness to this problem. One way to accomplish this is to repeatedly expose to the conscious attention of physicians examples of incidents which have occurred.

Ordinarily, damages cannot be awarded against a physician for professional negligence unless another physician testifies that the professional care given did not conform to the standard of medical practice in the community. Foreign-object incidents, however, are among the few exceptions to this rule. For this reason, there is a special urgency for physicians to guard against incidents of this kind.

Although it is not likely that all physicians will ever have a perfect record in this regard, it is possible to improve habits of carefulness. Every physician should be always on the alert for the risk of leaving a foreign object in the body.

Progress Report of Colon and Rectal Cancer Study Committee

THIS COMMITTEE has analyzed the records of 476 patients with cancer of the rectum or sigmoid colon who were admitted to 9 coöperating hospitals in the District of Columbia between May 1, 1966 and October 31, 1968. The highly important factors of patient delay and physician delay were quantified by recording the lengths of the interval between the onset of symptoms and first visit to a physician and of the interval between first physician visit and the establishment of the diagnosis.

Of the 476 patients, 72 were either asymptomatic individuals or persons with no colon symptoms who were seen by their physicians for other conditions. Diagnoses in these cases were established by routine rectal examination, anoscopy and sigmoidoscopy. Patients who report for medical evaluation within 1 month of the onset of symptoms are categorized as "no delay." Diagnosis made by the physician within 1 month of the first office visit is considered "prompt."

Analysis of Symptomatic Intervals

	No. Patients	Per cent
1 month (no delay)	134	33.2
2–3 months	103	25.5
4–6 months	90	22.3
7–12 months	39	9.6
Over 12 months	38	9.4
	404	100.0

Analysis of Promptness of Physician Diagnosis

	No. Cases	Per cent
Prompt diagnosis (within 1 month)	337	70.8
Diagnosis in asymptomatic persons	37	7.7
Diagnosis in persons with no colon symptoms	35	7.4
Physician delay (greater than 1 month)	67	14.1
	476	100.0

It is apparent that there is room for appreciable improvement in the factor of patient delay. Sixty-seven per cent of patients have symptoms for more than a month before reporting to their doctor. Education of the laity on the significance of symptoms of colon cancer must be continued and improved.

Diagnosis on the part of the physician in 15 per cent of presymptomatic individuals and prompt diagnosis in 70 per cent of patients with symptoms is commendable. The 14 per cent figure for delay in physician diagnosis, however, must be lowered further.

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Concomitant relief of G. I. gas distress—provided by the proven antiflatulent action of simethicone[3].

Dosage: One or two tablets (well chewed or allowed to dissolve in the mouth); one or two teaspoonsful to be taken between meals and at bedtime, or as directed by physician.

References: 1. Merck & Co., Merck Chemical Division: Antacid Literature Survey, Rahway, New Jersey. (MM3041, R-1286-K REV 463.) 2. Danhof, I.E., report on file. 3. Hoon, J.R.: Arch. Surg. *93*:467 (Sept.) 1966.

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Progress Report on the Cerebrovascular Disease Follow-up and Surveillance System in the Washington Metropolitan Area

LEONARD CHIAZZE, JR., Sc.D.*

THE WASHINGTON METROPOLITAN REGION Cerebrovascular Disease Follow-up and Surveillance System was established at Georgetown University School of Medicine in the spring of 1968 as a part of the operational program of the Washington Regional Medical Program. The System was established with the following goals in mind:

1. To establish a formal mechanism for measuring, counting, and evaluating the processes of medical care of stroke patients now given in the area, and to provide a baseline against which the effectiveness of the Regional Medical Program may be measured. Our System will provide quantitative measures for evaluating the results of case-finding activities, progress in the utilization of diagnostic techniques, and a variety of information related to long-term follow-up.
2. To facilitate nursing and follow-up services by providing a roster of patients which, through the coöperation of attending physicians, can bring nursing and follow-up services to the home.
3. To provide a variety of types of information which can be used in program planning, especially in the determination of requirements for types of medical facilities.
4. To provide a source of information for carrying out special epidemiologic or demographic studies.

The establishment of a population-based Stroke Surveillance System serving the entire region will be carried out in phases starting with the Georgetown University Hospital and then successively extending the reporting system to other hospitals in the District of Columbia, hospitals in the surrounding counties of Maryland and Virginia, and private physicians in the District of Columbia and in the counties. As our initial step, the medical records for a 5-year cohort of stroke patients admitted to Georgetown University Hospital are being reviewed under the direction of the Chairman of the Department of Neurology. The purpose of this review is to begin development of a uniform system of classifying stroke patients and providing the basis for a uniform system for the entire region. Let me make clear that the entire reporting system is not being developed on the basis of 1 hospital, but will be developed in coöperation with various clinical stroke units presently being set up throughout the region. The development of a uniform reporting system is absolutely essential to the success of any data system of this type.

The cohort of stroke patients hospitalized at Georgetown University Hospital will be followed to determine (1) survivorship and problems of follow-up, (2) current efforts at rehabilitation, and (3) current status of rehabilitation efforts. Follow-up and surveillance of new patients will be undertaken as soon as the System becomes operational. During the latter half of the initial phase all physicians affiliated with Georgetown Medical Center and willing to coöperate to the extent necessary will be included in the reporting system. The development of procedures for reporting by physicians will begin at that time, so that at the end of the initial phase coöperating physicians can begin routine reporting to the Follow-up and Surveillance System. Patients will then be followed through the coöperating physician on a regular basis. As a consequence of these activities we hope by the end of 12 months or so to be able to extend the reporting procedures developed to other hospitals and physicians. At the same time our initial hospital and physicians' records will provide the beginning of a patient population for the System. Thus, the development of a reporting system will be a continuous affair and will proceed simultaneously with the operation and extension of the System to the hospitals and physicians in the region.

Up to now the design of the data forms and protocols for abstracting information from which diagnostic, prognostic, and demographic information could be readily obtained has been a 2-stage operation. Under the direction of the Chairman, Department of Neurology, a protocol developed by the Chairman for use in abstracting categorical and quantitative data from hospital charts has been tested. The thrust of this review has been to direct the abstractor of the chart to verify or correct the final diagnosis of stroke and location of the lesion. The initial objective for this particular protocol was the development of a manual or set of criteria which could be applied by a non-physician to the medical record of stroke patients. Though the protocol is still in its formative stages, it has become quite clear that such a document as has currently been developed will not enable a non-physician to do an adequate review and perhaps might even have to be limited to a neurologist. In addition, the time necessary to review each record has been greater than anticipated. As a consequence, we have decided that it will not be possible to review the case records of all stroke patients in the region by a neurologist or physician in another medical specialty. Therefore, we are planning to begin moving ahead without an overly restrictive definition of stroke. The definition to be employed is that which is currently used by the medical community in the Washington Metropolitan Region. If a physician states that a patient has a stroke, that would be sufficient evidence for registering that patient. We are, however, developing a sampling scheme which will investigate very thoroughly a subset of these total records to attempt to determine the extent to which diagnoses are missed and the extent to which some misclassification and perhaps inadequate handling results from incorrect diagnoses.

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* Division and Project Director, Cerebrovascular Disease Follow-up and Surveillance System, Metropolitan Washington Regional Medical Program; office: Division of Biostatistics and Epidemiology, Department of Community Medicine and International Health, Georgetown University School of Medicine, Washington, D. C. 20007.

To date we have evolved 2 types of data forms for the initial abstracting required to enter new cases and a diagnostic review form for the eventual abstracting of data based on review of the case records. These have already undergone several revisions and will undergo several more. Once we begin using a form in more than 1 hospital we shall eventually engage in discussions for uniform reporting of data between regions. At the present time the difficulties for obtaining uniform reporting within a region for this disease are so great that it would be quite premature to attempt now to develop inter-regional uniform reporting.

Currently the primary purpose of our confidential abstract form is to obtain personal and demographic information about a case when it first comes to our attention. This will enable the System to enter the case properly and initiate follow-up without delay. In addition, diagnoses can be transcribed directly from the records drawn from all sources which may be available, such as the front sheets of the charts, the autopsy reports, and death certificates. After diagnostic review, verifications or revisions of diagnoses can be entered. Previous admissions, if any, are indicated on the records and are processed the same way. Particular attention is paid to any statements in records concerning recommendations and implementations of follow-up care. In order to maintain document control a number of inventory sheets have been prepared. These inventory sheets indicate charts signed over for processing, date of accession, procedures to and from diagnostic review, and time returned to permanent source including individuals responsible for transfer of records. Besides serving routine inventory purposes, such forms help the Follow-up and Surveillance System to protect the confidentiality of medical records. Charts and forms which bear the names of patients are restricted to System personnel and to the staff of the Neurology Department and are kept under lock and key when not in use. These cases have been used in testing and revising abstracting forms, and while the current version of the abstract has been tested on all cases, the diagnostic review has been applied only to about half.

In the development of the Follow-up and Surveillance System some alteration of general direction may be necessary at those crucial points when accumulated evidence indicates what the new directions should be. Those involved in a program such as this should remain flexible within the general framework of objectives and be willing to alter some procedures and goals as the accumulated evidence indicates. Clearly, ours represents a regional program, but the coördination and regionalization of any program do not come about automatically. It has been necessary—and certainly will continue to be necessary—to spend a very great amount of time consulting with other programs for the development of a regional program. As clinical stroke units develop, more and more liaison and development with these programs become imperative.

Since many stroke victims do not die but experience prolonged and often profound disability, salvage to rehabilitation and service innovations place new responsibilities upon communities and their health resources. The area of rehabilitation and service innovations and the utilization of the health resources of the community, bringing patients and these resources together, provide substantial potential contributions to patient services through the Follow-up and Surveillance System. We believe that as a result of our experience in the first 4 months the System has the potential to make substantial contributions to the areas of patient service, especially by examining and evaluating the processes by which care is recommended and delivered after the patient recovers from his acute episode and leaves the hospital. The entire operation should, in fact, be able to provide data on evaluation of many aspects of the total Regional Medical Program with respect to the management and continuing care of stroke patients.

TV Heart Conferences Funded by RMP

An interesting experiment in the use of television for teaching physicians in their homes begins this month at the Georgetown University School of Medicine. Weekly heart conferences will be televised by WETA-TV, the local educational TV station, to some 125 practicing physicians in the Washington Metropolitan Area.

The program, aimed at physicians who treat heart disease, is supported by a $225,000 grant from the Division of Regional Medical Programs of the Health Services and Mental Health Administration, Department of Health, Education, and Welfare, to the Metropolitan Washington Regional Medical Program, of which the D. C. Medical Society is the grantee organization.

The weekly conferences on the health problems of live patients will be televised into the physicians' homes on 12-inch, portable sets provided under the pilot project. Each set is equipped with an audiophone jack and a unit to receive a scrambled signal. Physicians will be able to plug stethoscopes into their TV sets and listen to the heart sounds of patients at the conference. To make them interesting, programs will present many types of audiovisual teaching aids, including X-rays, electrocardiograms, sound tracings and movies.

Each program will be shown at 10 p.m. on Thursday. It may be transmitted again Sunday afternoon for those who miss the Thursday night program.

The viewing physicians will take examinations prepared by educational technologists before and after each program in order to document learning.

The Thursday night conferences are conducted by the staff of the Division of Cardiology at Georgetown University Hospital. Co-directors of the TV project are Dr. Proctor Harvey, Director of the Division, and Dr. John F. Stapleton. Specialists from other hospitals and universities in the Washington area will aid in the project.

Drug Dependence—Barbiturates

Barbiturates (commonly known as red birds, yellow jackets, blue heavens, goof balls) are sedatives, prescribed to induce sleep or, in smaller doses, to provide a calming effect. All are legally restricted to prescription use only. They are dependence-producing, both psychic and physical, with variable tolerance. Signs of physical dependence appear with doses well above therapeutic level.

Barbiturates are taken orally as tablets or capsules and sometimes intravenously by drug-abusers. Small amounts make the user relaxed, sociable, good-humored. Heavy doses make him sluggish, gloomy, sometimes quarrelsome. His speech is thick and he staggers. Sedation and incoördination are progressive with dose and are at least additive with alcohol and/or other sedatives and tranquilizers.

The appearance of drunkenness with no odor of alcohol characterizes a heavy dose. Sedation with variable ataxia marks the abuser.

Sedation, coma and death from respiratory failure may result from overdosage. Inattentiveness may cause unintentional repetitious administration to a toxic level. There are many deaths each year from intentional and unintentional overdose. Potentiation with alcohol is particularly hazardous. The drug is addictive, causing physical as well as psychic dependency, and withdrawal phenomena are characteristically different from withdrawal of opiates.

Symposium on "The Physician and Drug Abuse"

The Department of Psychiatry of Georgetown University School of Medicine will sponsor a Symposium, "The Physician and Drug Abuse," on May 21, from 1 to 5 p.m., in the Gorman Auditorium of Georgetown University Hospital. The program is supported in part by a training grant from the National Institute of Mental Health.

The speakers will be Dr. Sidney Cohen, Director, Division of Narcotic Addiction and Drug Abuse, National Institute of Mental Health; Dr. William Beaver, Department of Pharmacology, Georgetown University; Dr. Roger Meyer, Department of Psychiatry, Boston University; Dr. James Mathis, Department of Psychiatry, Rutgers University; and Dr. Earl H. Mitchell, Jr., private practitioner in Washington who is concerned primarily with problems of the alcoholic.

The medical, psychiatric and pharmacologic aspects of the problem of drug abuse will be presented. Emphasis will be on how the physician can recognize and manage problems of drug misuse, habituation, and addiction seen in his practice. Special attention will be directed to drug use by adolescents.

The Symposium is open to physicians in the Washington Metropolitan Area. There is no registration fee. Further information may be obtained from Dr. Louis F. Rittelmeyer, Jr., M.D., Department of Psychiatry, Georgetown University School of Medicine, Washington, D. C. 20007; telephone 625-7351.

►NEW MEMBERS

Active

Donald Harrison McKnew, Jr., M.D. Office: 2141 K Street, N.W. Born in Washington, D. C. Medical degree: Johns Hopkins Medical School, 1961. Specialty: Psychiatry.

Kannarkat P. Verghese, M.D. Office: Freedmen's Hospital. Born in Manalur, India. Medical degree: Trivandrum Medical College, India, 1958. Specialty: Pediatrics.

Leon W. Whitt, M.D. Office: 5225 Connecticut Avenue, N.W. Born in Washington, D. C. Medical degree: Howard University, 1954. Specialty: Psychiatry.

Associate

Jaime Buenaventura, M.D. Office: 500 West Montgomery Street, Rockville, Md. Born in Bogota, Colombia. Medical degree: National University of Colombia, 1959. Specialty: Psychiatry.

Arnaldo Antonio Garro, M.D. Office: 2704 Riviera Street, Marlow Heights, Md. Born in Cañete, Peru. Medical degree: University of San Marcos, Peru, 1959. Specialty: Otolaryngology.

Edward Harold Levine, M.D. Office: U. S. Public Health Service. Born in Denver, Colo. Medical degree: University of Colorado, 1946. Specialty: Internal Medicine.

Balint Jeno Rozsa, M.D. Office: 5923 Franconia Road, Alexandria, Va. Born in Hungary. Medical degree: P. Pazmany University, Budapest, 1936. Specialty: General Practice.

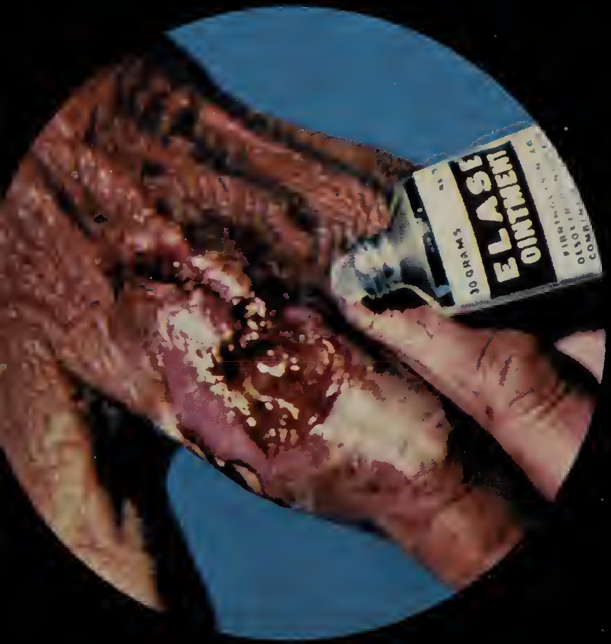
Marc Vincent, M.D. Office: U. S. Public Health Service. Born in Brussels, Belgium. Medical degree: University of Librede Bruxelles, 1946. Specialty: Pediatrics.

GEORGE WASHINGTON PHYSICIANS AT THE ZOO

A MEDICAL TEAM from George Washington University visited the Washington National Zoo in February to examine the great apes. Dr. Thomas M. Peery, Chief of Pathology, set up the schedule of procedures to include chest X-rays, blood tests, PPD injections, skin biopsies, and chromosomal analyses. Above, gynecologist James G. Sites (center) examines the orangutan Susie. With him are pathologist William L. Marsh, Zoo veterinarian Clinton W. Gray, and epidemiologist Jack W. Millar.

Early results of the tests showed 1 animal positive and 1 suspected of TB, but the animals were not infected with human tuberculosis and could be allowed back on public view.

is ulcer did not heal...until its surface was cleared of dead tissue and debris



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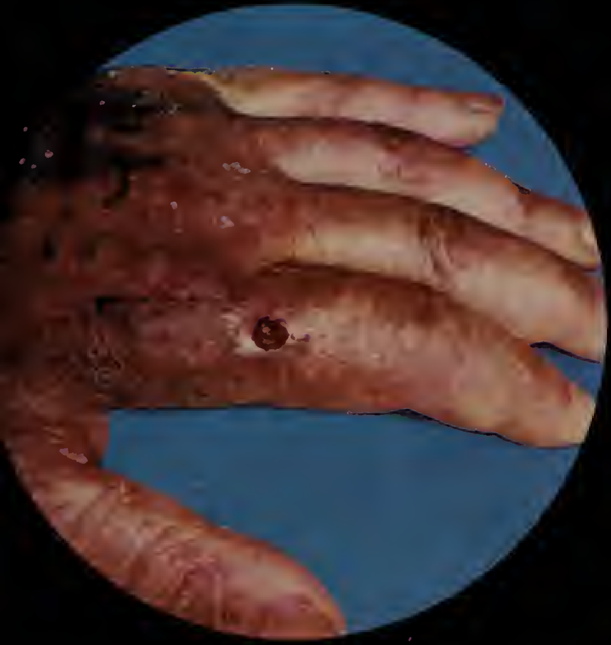
EIGHTEEN DAYS LATER
Healing has progressed rapidly without interruption or interference from any accumulated purulence or necrotic tissue. Greatly reduced size of lesion and minimal scar tissue indicate quality and vigor of healing which is almost complete.



to aid in debridement
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(fibrinolysin and desoxyribonuclease, combined, [bovine] ointment)

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By helping to remove dead tissue and debris from the ulcer's surface, ELASE Ointment creates a better environment for the elimination of infection, for healthy granulation... *for healing.* Its lytic enzymes effectively break down DNA in dead leukocytes and other debris... the fibrin in blood clots, serum, and purulent exudates... and the denatured proteins in necrotic tissue. Protein elements of *living* tissue are relatively unaffected. ELASE Ointment is indicated in stasis ulcers and in other infected or inflamed ulcers caused by circulatory disturbances. In cases requiring skin grafting, it is used preoperatively for debridement. For ambulatory patients debridement with ELASE Ointment is a convenient therapy and a regimen likely to be followed. *Precautions:* Observe usual precautions against allergic reactions, particularly in persons with a history of sensitivity to materials of bovine origin or to mercury compounds. *Adverse Reactions:* Side effects attributable to the enzymes have not been a problem at the dose and for the indications recommended. *Discussion:* Successful use of enzymatic debridement depends on several factors: (1) dense, dry eschar, if present, should be removed surgically before enzymatic debridement is attempted; (2) the enzyme must be in constant contact with the substrate; (3) accumulated necrotic debris must be periodically removed; (4) the enzyme must be replenished at least once daily; and (5) secondary closure or skin grafting must be employed as soon as possible after optimal debridement has been attained. It is further essential that wound-dressing techniques be performed carefully under aseptic conditions and that appropriate systemically acting antibiotics be administered concomitantly if, in the opinion of the physician, they are indicated. *Available:* ELASE Ointment is supplied in 30-Gm. tubes containing 30 units (Loomis) of fibrinolysin and 20,000 units of desoxyribonuclease with 0.12 mg. thimerosal (mercury derivative); and in 10-Gm. tubes containing 10 units of fibrinolysin and 6,666 units of desoxyribonuclease with 0.04 mg. thimerosal. ELASE Ointment has a special base of liquid petrolatum and polyethylene; contains sodium chloride and sucrose used during manufacture; is stable at room temperature through the expiration date stated on the package.

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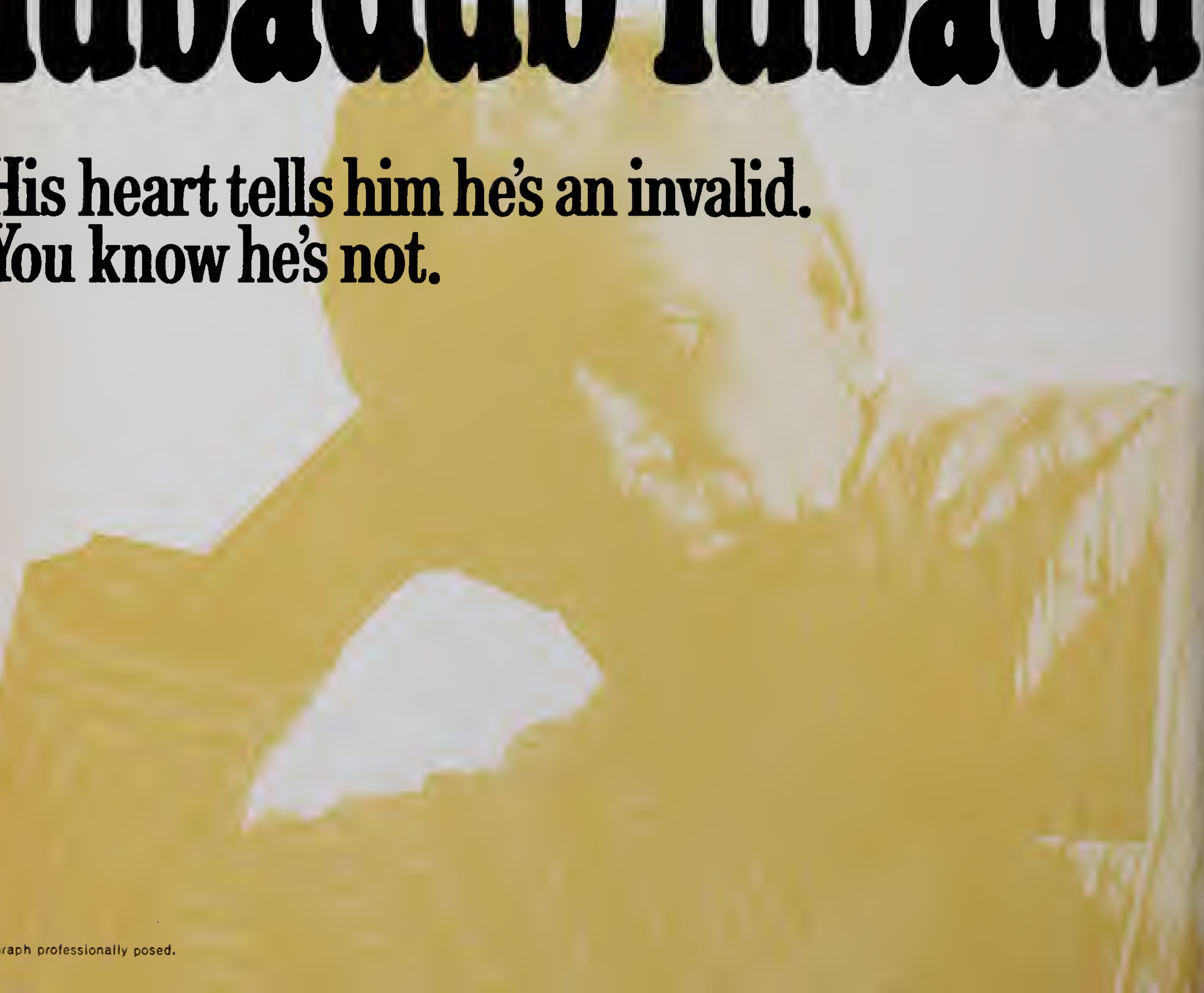
40160

lubadub lubadu

His heart tells him he's an invalid. You know he's not.



Photograph professionally posed.

Contraindications: History of sensitivity to meprobamate.

Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis,

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xiety is expected in the cardiovascular patient. ittle may even be desirable.

t when anxiety is exaggerated . . . when it erferes with sleep . . . when it aggravates diovascular symptoms, your help may needed.

turally, you'll want to reassure the patient.

d perhaps prescribe Equanil (meprobamate) adjunctive therapy. It helps relieve anxiety l tension specifically, yet gently.

nost 15 years' use has shown that Equanil usually well tolerated as well as effective. le effects are generally limited to transient wsiness; serious, therapy-interrupting e effects are rare.

stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® [strip pack], Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

Wyeth Laboratories Philadelphia, Pa.

Equanil®
(meprobamate) Wyeth

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A little sunshine for summer cold and allergy sufferers.

Novahistine LP can brighten things in a hurry for your summer cold and allergy patients.

These continuous-release, decongesant tablets contain a vasoconstrictor-antihistamine formulation that goes to work promptly and usually provides effective relief even in those cases of nasal congestion caused by repeated allergic episodes.

And, convenient twice-a-day dosage with Novahistine LP lets most patients enjoy relief all day and all night.

Use with caution in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

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The Dow Chemical Company,
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Novahistine® LP decongestant

(Each tablet contains 25 mg. of phenylephrine hydrochloride and 4 mg. of chlorpheniramine maleate.)

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HEALTH DEPARTMENT NOTES

Center for Mentally Retarded Adolescents

A HEALTHFUL COMMUNITY doesn't just happen. It requires the services of a dedicated health team that includes both private and public health physicians, research scientists, nurses, psychologists, therapists, and other medical and paramedical personnel.

I have stated in the past that "Dynamic ways to meet old and new problems must be found" and that improved services depend upon having "the necessary staff and resources to adequately manage programs." To be successful, many of our programs in the Department of Public Health depend upon the private medical sector of the community and other private and public agencies.

One such program is the Development Services Center, located at 1905 E Street, S.E., for moderately to mildly mentally retarded adolescents 10 years of age and over. Tailored to the individual needs of the patient, the program is open to any resident of the District who can function with only moderate supervision and is without physical disabilities requiring significant surgical or medical care. Indigent families pay no fees, and only a minimal charge is made to others not considered indigent.

The purpose of the program is to provide therapeutic treatment as early and continuously as possible while interrupting the patient's normal daily routine of family and school life as little as possible.

The program grew out of the idea of using all suitable community facilities as a means of developing the abilities of each patient. To accomplish this, individual and group psychotherapy, occupational, recreational and manual arts therapy, social services, and special education were deemed necessary to the program.

We called upon the Board of Education to provide the special education teachers and the Department of Recreation to make available recreational therapists. Catholic University has found the Center an ideal facility to provide practical work training for graduate students in special education, while at the same time the students provide additional personnel to aid the permanent staff.

In addition to treatment, medical supervision, emergency services, family guidance and counseling are available. These services are provided by a medical officer, psychologist, social worker, graduate nurses, and nursing aides.

Referrals to the Center may be made by private or public social, educational or welfare agencies, by private physicians, members of prospective patients' families, and by the school when a pupil is having difficulty fitting into classroom routines.

Upon referral and after an initial screening by staff members and interviews with parents or other responsible adults, the youth may be accepted for a 2-week evaluation period. If, upon completion of the evaluation period, it is thought that the patient will benefit from further treatment, he is accepted into the program.

Some youngsters spend the entire day at the Center, which is open from 8:15 a.m. to 4:45 p.m., Monday through Friday, excepting holidays, while others divide their time between the Center and school. The number of patients at the Center at any one time varies since each patient requires personalized treatment and may require treatment of from only a few weeks to several months.

This program of specialized professional treatment, available through the coöperative efforts of local medical and other resources, and offered to retarded youngsters who are referred by both private and public sources, is a prime example of a "dedicated health team" meeting an old problem in a dynamic new way to make a more healthful community.

MURRAY GRANT, M.D., D.P.H.
D. C. Director of Public Health

News & Personals

Summary of Executive Board Actions

Proceedings of February 24 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting, which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Thomas M. Arnett, Robert J. Coffey, Henry D. Ecker, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. The meeting was called to order by Dr. Wilner at 7:15 p.m.

The minutes of the January 27, 1969 Board meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

January	28	Committee on Public Information and Education
	30	Ad Hoc Cancer Study Committee
	31	Committee on Blood Banks
February	3	1969 Scientific Assembly Program Committee
	6	Physicians Placement Committee
	13	Committee on Public Welfare
	14	Committee on Emergency Medical Service
	18	Board of Credentials
	18	RMP Policy and Steering Committee
	20	Membership Committee
	21	Committee on Medical Aspects of Sports

Board of Credentials: On recommendation of the Board of Credentials, 3 applicants were elected to Active membership and 5 to Associate membership. Their names appear on page 220. Approval was given to the following changes in membership status:

Transfers

Active to Special: Thomas A. Wildman
Active to Associate: Gerald Mervin Fenichel and Benson C. Schwartz
Associate to Active: Grace H. Guin

Reinstatement

Active: Andrew F. Burton

Resignations

Active: Richard L. Gross and Jane B. McKewen
Associate: Everett S. Caldemeyer, Robert E. DuPrey, Wilfred R. Ehrmantraut, Arnold Jay Kaplin, K. Charles Latven and Charles J. Savarese, Jr.
Resident-Intern: Vincent P. Sweeney

The dues of Dr. Walter Howard Levy were remitted because of illness.

Committee on Blood Banks: The Board voted to accept the report of this Committee and to recommend that the regulations on biological products in the District of Columbia be revised so as to conform with other states. The present statute in D. C. restricts hospitals from transferring blood products between each other whereas in other states hospitals can freely exchange and transfer blood products.

Endorsement of "Block Mother" Plan: In her letter of January 7, Mrs. L. L. Rayford, Jr., Chairman of Safety-Disaster Preparedness of the Woman's Auxiliary to the Medical Society, stated the Auxiliary's interest in sponsoring a "Block Mother Plan" in a few of the District's public and parochial schools. This program, initiated by the Woman's Auxiliary to the AMA, is designed to provide a place where a child may obtain help in notifying parents or school authorities in case of an emergency before or after school. A "Block Mother," who is a responsible volunteer approved by a committee of the PTA, is recruited in each block, and she displays prominently in a window of her home a white sign inscribed with orange letters, "Block Mother." Children are instructed to go to such homes in an emergency. The "Block Mother" may be instrumental in helping law enforcement agencies inhibit crime.

The Board voted to grant permission to the

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Woman's Auxiliary to institute this program in the District of Columbia.

Colon-Rectal Cancer Study Committee: At the request of Dr. John F. Potter, Chairman, a motion was made and carried to approve the proposed budget for the Colon-Rectal Cancer Study Committee which will enable it to continue for the year 1969–70.

Progress Report on RMP: The Board accepted, for information, the report on RMP activities submitted by Dr. Arthur E. Wentz.

Scientific Assembly: President Bacon stated that plans for the 1969 Scientific Assembly, to be held at the Mayflower Hotel, September 24, 25 and 26, are well under way. The plan is for 10 sessions, of 1 hour and 20 minutes each, to cover 5 subjects: Diseases of the Colon and Rectum, Thromboembolic Diseases, Coronary Artery Diseases, Nuclear Medicine, and Medicine in the 1970's.

Dr. Bacon's appointees to General Chairman and to the Program and Scientific Exhibit Committees were approved. They are:

General Chairman: Dr. Louis Gillespie.

Program Committee: Dr. Nathan Zweifler, Chairman; Drs. Edward E. Cornwell, Jr., John S. Dillon, Robert F. Donohoe, Phillip J. Ferris, Karl C. Jonas, George Kelser, Jr., and Christopher Martin, consultant.

Scientific Exhibit Committee: Dr. James Snyder, Chairman; Drs. Charles Townsend, Lois I. Platt, John Chandler Smith, and Louis Wener.

Washington Free Clinic: Dr. Bacon supplied the following information to the Board on the Washington Free Clinic which had been furnished him by Dr. Murray Grant, D. C. Director of Public Health.

The Clinic, located at 1515 Wisconsin Avenue in a church basement, operates to provide free medical and psychiatric care, as well as clinical guidance from the clergy, to adolescents and young adults of the "hippie" and underground communities of this area. Facilities are available for providing emergency legal help in criminal cases and specialty consultation, including dental services. In addition to the Medical Director, Dr. Stephen M. Brown, there are a number of physicians who volunteer their services. Thirteen of the physicians are licensed in D. C., 3 or 4 have license applications pending, and 2 are members of the D. C. Medical Society. At least 1 physician is on duty at all times the Clinic is open, which is from 8:30 p.m. to 11 p.m., 6 evenings a week. A receptionist and janitor, members of the group served, complete the staff.

The Clinic is in need of medical and drug supplies, miscellaneous equipment, and laboratory support. It is recording 100 to 120 patient visits per week.

Representation on City Council: The matter of Medical Society representation on the City Council was considered at the January meeting of the Board and came up for further discussion at this meeting. Dr. Wilner's suggestion that liaison with the Council might be most helpful to the Society was favored by members of the Board and it was agreed that efforts should be made to accomplish this.

National Advisory Committee on Regional Medical Planning: At the invitation of the AMA to propose candidates for this committee the Board nominated Dr. Thomas W. Mattingly and Dr. Desmond M. O'Doherty.

Editorial Board Dinner: Dr. Bacon reported on the joint dinner meeting of the Editorial Board and Consulting Editors of the MEDICAL ANNALS, which he attended, February 18, at the Cosmos Club, where it was held at the invitation of Dr. Herbert P. Ramsey. He enjoyed the meeting, he said, and believed that the ANNALS was doing well, but it could use more scientific papers of a high caliber.

There being no further business, the meeting was adjourned at 9:40 p.m.

Davidson Lecture on Religion and Medicine

Exhibit Hall
of the
Medical Society of the District of Columbia

Wednesday, May 21, 1969—8:00 p.m.

LECTURER

Joseph T. English, M.D.

Administrator of Health Services
and Mental Health Administration
Office of Economic Opportunity

SUBJECT

"The Church and Charity Medicine:
Physicians and Clergy Confront the Crisis"

Physicians, clergymen and guests are urged to attend. There is no admission fee.

Sponsored by Committee on Liaison
with the Clergy
Elizabeth S. Kahler, M.D., Chairman

►GENERAL NEWS

The American Medical Association's Registry on Adverse Reactions Due to Occupational Exposures, which has been collecting data for 2 years, requests the assistance of all physicians to keep the Registry posted on ailments that may be related to adverse occupational conditions. The Registry does not, however, want information on injuries and accidents.

Information on occupational exposures to potentially hazardous substances should be sent to the Registry, AMA Department of Occupational Health, 535 North Dearborn Street, Chicago, Illinois 60610.

The Committee's purpose in initiating the Registry was to create a professional repository for information storage, retrieval, and dissemination of new information to professionals charged with protection of workers from harmful occupational exposures. A large volume of reports must be collected before the present information will support reasonably certain probability of causal relationships.

The American Council of Otolaryngology, a new medical organization, has been incorporated in the District of Columbia and will concern itself with the national health problems in its specialty field. It will keep abreast of and seek ways to meet national manpower needs of the specialty in both medical and paramedical categories. Another objective of the Council is to assist training programs at the residency and postresidency levels. Dr. Jerome A. Hilger, of St. Paul, Minn., was elected Chairman of the Board by the organizing committee. The new Council, which will establish a national office in Washington, will represent the interests of the Nation's estimated 6,000 otorhinolaryngologists.

The Past Presidents Club of the Medical Society of the District of Columbia held its second annual social gathering at the home of Dr. Victor R. Alfaro on March 4, 1969. Co-hosts were Drs. Fred R. Sanderson and William P. Herbst. Guests included Drs. William M. Ballinger, Daniel L. Borden, Robert J. Coffey, Karl C. Corley, Frank D. Costenbader, James S. Dryden, Raymond T. Holden, Preston A. McLendon, Edward W. Nicklas, Herbert P. Ramsey, James W. Watts, Paul R. Wilner, and Wallace M. Yater.

Also present were Dr. Frank S. Bacon, President, and Dr. Frank S. Pellegrini, President-elect, of the Medical Society; Mr. Warren E. Magee, the Society's legal counsel; and Mr. Theodore Wiprud, former Secretary of the Medical Society.

The Arthritis Research Program of George Washington University has received a bequest of $46,850.00 from the estate of the late Mrs. Ruth M. Betts of Washington. Dr. Thomas McPherson Brown, Director of Rheumatology and Rehabilitation Medicine at the Medical Center, indicated that these funds will be used "to support on-going research related to the cause of rheumatoid disease, new methods for precise measurement of the type and degree of involvement of the patient, and comparison of results of treatment."

At the meeting of the **Board of Directors of the Washington Hospital Center Research Foundation** in March, the following officers were reëlected: Mr. A. Marvin Braverman, President; Dr. Ernest A. Gould, Vice President; and Mr. Justin D. Bowersock, Treasurer. Newly elected officer was Dr. James A. Curtin, Secretary.

The Medical Staff of Children's Hospital of D. C. has reëlected Dr. William A. Howard, Chairman, and Dr. John H. Bayly, Vice Chairman, for a third term each. In these positions they also serve on the Board of Directors of the Hospital. Dr. Morris Feitel was elected for a second term as Secretary-Treasurer of the Medical Staff.

The Department of Obstetrics and Gynecology of Morris Cafritz Memorial Hospital has elected officers to serve until December, 1971. They are: Dr. Edward J. Conner, Chairman; Dr. Ross J. Clark, Vice Chairman; and Dr. Ralph E. Greene, Treasurer.

The Association of American Medical Colleges has employed a first full-time Executive President. He is Dr. John A. D. Cooper, Dean of Sciences and Associate Dean of Faculties at Northwestern University. Dr. Cooper, who will assume his new duties in July, has been involved in AAMC affairs for 20 years and currently is editor of the Association's *Journal of Medical Education*.

Laurel General Hospital, in Laurel, Md., a 14-bed institution which has been in service for more than 11 years, closed its doors at the end of February. The Board of Directors is considering an expansion program and a reopening.

At the regular Wednesday meeting of the **Woman's Auxiliary to the Medical Society of the District of Columbia,** March 12, the following slate of officers, submitted by the Nominating Committee, was elected to serve the Auxiliary beginning July 1:

President elect: Mrs. Charles V. Pate
1st Vice President: Mrs. Richard H. Spire
2nd Vice President: Mrs. George W. Hyatt
Recording Secretary: Mrs. Arthur G. Kreischer
Assistant Recording Secretary: Mrs. Kenneth A. Grigg
Corresponding Secretary: Mrs. Harry A. Horstman, Jr.
Assistant Corresponding Secretary: Mrs. George T. Economos
Treasurer: Mrs. Robert B. Havell
Assistant Treasurer: Mrs. Robert B. Irey

Mrs. Raymond A. Osbourn, President-elect during 1968–69, will succeed Mrs. Alfred J. Suraci as President.

PERSONALS

Dr. Karl C. Corley was elected Secretary-Treasurer of the American College of Radiology, February 21, at the annual meeting of the College in Atlanta, Ga. Dr. Corley, a radiologist on the staff of Doctors Hospital, became a Fellow of the American College of Radiology in 1946 and was elected to its Board of Chancellors in 1968.

Dr. Corley, Secretary-Treasurer of College of Radiology

At the same meeting of the College, **Dr. William E. Sheely, Dr. William S. Cole, and Dr. Homer L. Twigg** were elected Fellows of the College. Dr. Twigg is an Associate member of the D. C. Medical Society.

Dr. Julius S. Piver was certified by the American Board of Obstetrics and Gynecology in November 1968.

Dr. E. Clarence Rice, Washington pathologist who retired at the end of 1968 after 52 years of private practice and is now Executive Director of the Diabetes Association of the Washington, D. C. Metropolitan Area, was given a testimonial dinner, February 15, at the Sheraton-Park Hotel.

DR. E. CLARENCE RICE (right), with Mrs. Rice, at a testimonial dinner, February 15, at the Sheraton-Park Hotel. With him are Senator Gale McGee, of Wyoming, the principal speaker, and Mrs. McGee.

Some 400 to 500 persons, members of the Association, colleagues, patients, and friends, were present. Senator Gale McGee of Wyoming, himself a diabetic, was the principal speaker. Dr. Herbert P. Ramsey, a close friend of Dr. Rice's since high school days at Eastern, reminisced of events through the years and presented the honoree with a testimonial album. Others who spoke were Dr. W. Luther Hall, long associated in practice with Dr. Rice; Dr. Max G. Sherer, Vice President of the Diabetes Association; and Dr. Maurice Protas.

Dr. Frank S. Bacon, President, represented the Medical Society of the District of Columbia at the dinner. Dr. A. A. Silver of Baltimore, who is Medical Director of Camp Glyndon, described the new summer camp for diabetic children which is near Reisterstown, Maryland. A second purpose of the dinner was to raise funds for this camp, which has long been Dr. Rice's particular interest and objective, and a check between $4,000 and $5,000 was raised and presented to Dr. Silver. The goal for funds is $500,000, about half of which has been raised.

Dr. Paul R. Wilner has been elected Chairman of the Board of Appeals, D. C. Selective Service System, succeeding the late George C. Hayes. Dr. Wilner was appointed to the Board of Appeals by President Eisenhower in 1960.

SLIT LAMP PURCHASED FOR EYE CLINIC

DR. INEZ E. WILBER (left), Senior Attending in Ophthalmology at the Washington Hospital Center, was on hand, February 20, to welcome 2 officials of the Zonta Club of Washington, Mrs. Henry S. Owens, President, and Miss Ruth Blanchard (right), Chairman of the Service Committee, to the Center. The purpose of the visit was to present a check in the amount of $2,558 to Mr. Richard M. Loughery, Administrator, to be used to purchase a Nikon Slit Lamp for the Eye Clinic, which is directed by Dr. Wilber, also a Zontian. The Zonta Club has now donated over $5,000 for equipment to the Eye Clinic.

Dr. Daniel L. Finucane, Director of the Public Health Department of Prince George's County, Md., has been elected Chairman of the Board of Directors of the Health Facilities Planning Council for Metropolitan Washington, D. C. He has been a member of the Board of Directors since 1962 and a member of the Executive Committee for the past year.

Dr. Edward W. Nicklas was one of 3 elected to membership on the Executive Committee for 1969.

Patients Needed at Gerontology Research Center

THE COÖPERATION OF PHYSICIANS is requested in the referral of patients for a study of progeria being conducted by the National Institute of Child Health and Human Development at the Gerontology Research Center in Baltimore. The purpose of this study will be to demonstrate whether or not characteristics of aging or senescence in man are shared by patients with progeria.

Needed are children or adolescents with typical features of progeria (cachectic dwarfism, relative normocephaly, normal intelligence, bird-like facies, bilateral coxa valga, hypoplasia of mandible, and hypoplasia of clavicles, and senile-appearing skin) and suspected or proven arteriosclerosis or atherosclerosis. Studies performed will include physiological testing, punch skin biopsy for collagen characterization and fibroblast tissue culture, cardiologic evaluation with exercise electrocardiogram, other biopsies if clinically indicated, and chromosomal analysis.

Selected patients will be admitted to the Gerontology Research Ward (at Baltimore City Hospitals) of the Gerontology Research Center. Upon completion of their studies, patients will be returned to the care of the referring physician who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. William Reichel, Gerontology Research Center, NICHD, Baltimore City Hospitals, Baltimore, Md. 21224; telephone (301) 342-5400, Ext. 1726.

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When specimens are obtainable, your culture studies will indicate the usefulness of DECLOMYCIN.

Effectiveness: DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines in infections caused by organisms sensitive to the tetracyclines.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocol
pruritus ani. Skin—maculopapular and erythematous rashes; a
case of exfoliative dermatitis has been reported. Photosensiti
onycholysis and discoloration of the nails (rare). Kidney—rise in B
apparently dose-related. Transient increase in urinary output, so
times accompanied by thirst (rare). Hypersensitivity reactions—
caria, angioneurotic edema, anaphylaxis. Teeth—dental staining (
low-brown) in children of mothers given this drug during the latter
of pregnancy, and in children given the drug during the neonatal
od, infancy and early childhood. Enamel hypoplasia has been see
a few children. If adverse reaction or idiosyncrasy occurs, disconti
medication and institute appropriate therapy. Demethylchlorte
cycline may form a stable calcium complex in any bone-forming tis
with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Sh
be given 1 hour before or 2 hours after meals, since absorptio
impaired by the concomitant administration of high calcium con
drugs, foods and some dairy products. Treatment of streptoco
infections should continue for 10 days, even though symptoms h
subsided.

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►OBITUARIES

William Earl Clark, M.D.

(1879–1969)

Dr. William Earl Clark, one of Washington's best known physicians, died, February 28, 1969. During a practice of 60 years, Dr. Clark, whose specialty was internal medicine with a subspecialty of gastroenterology, had served 3 generations of District residents. He retired in 1964.

WILLIAM EARL CLARK, M.D.

Dr. Clark was born in Philadelphia, September 16, 1879. His family moved to Washington in 1897, and he enrolled at the Corcoran Scientific School of Columbian (now George Washington) University. After a year he entered the School of Medicine and received his medical degree from Columbian in 1904. He interned for a year at Garfield Memorial Hospital and spent another year at Pennsylvania Hospital in Philadelphia.

During World War I he served with the Red Cross in France. Returning to the District, he opened a diagnostic clinic to which he attracted many young Washington physicians. He was long associated in practice with Dr. Hill Carter, Dr. Robert W. Sjogren, and the late Dr. Clapham P. King.

Dr. Clark was President of the Medical Society of the District of Columbia in 1945–46. In 1955 the Society honored him with a Certificate for Meritorious Service and in 1959 the Woman's Auxiliary to the Southern Medical Association named him Doctor-of-the-Year.

He was on the teaching staff of Georgetown University School of Medicine from 1924 to 1945 as Associate Professor of Medicine. He was associated with Doctors Hospital from its founding and served on its Board of Directors.

Dr. Clark was elected an Active member of the Medical Society of the District of Columbia in 1907 and became a Life member in 1948. He was a Fellow of the American College of Physicians and a member of the American Medical Association, the Southern Medical Association, the American Gastro-Enterological Association, the George Washington University Medical Alumni Association, the Clinico-Pathological Society, the Hippocrates-Galen Society, and the International Medical Club. The William Earl Clark Society of Gastroenterology was named in his honor. He belonged to St. Alban's Church, Rotary Club, and the Chevy Chase Club.

For many years he maintained a summer home at Mt. Desert Island, Maine, where he indulged in his favorite hobby, yachting. He had served as Vice Commodore of the Northeast Harbor Fleet.

Dr. Clark leaves his wife, Mrs. Ivy Hamilton Clark, and 2 daughters, Mrs. Jay C. Miller, of Bethesda, Md., and Mrs. Robert Taylor, of California.

Howard Ellsworth Newman, M.D.

(1899–1969)

Dr. Howrad E. Newman, Washington surgeon and general practitioner, died, February 22, 1969 at Casualty Hospital. He lived at 3370 Denver Street, S.E.

Dr. Newman was a Washingtonian, born December 19, 1899. He attended the public schools of Washington and received his premedical training at George Washington University. He graduated in medicine from Georgetown University in 1933. He interned for a year at Gallinger Municipal (now D. C. General) Hospital and served as surgical resident at Gallinger from 1934 to 1938. He had staff privileges at many Washington hospitals.

Before retiring in 1959 he maintained offices in the Columbia Medical Building. Later, from 1961 to 1966, he served as medical officer in charge of the health clinic at St. Elizabeths Hospital.

He was elected to Active membership in the Medical Society of the District of Columbia in 1940. He was a member of the American Medical

Association and the American Society of Abdominal Surgeons. He also belonged to the Dawson Lodge, No. 16, of the Masons, the Shrine, Columbia Commandry No. 2, and the Eastern Branch Kiwanis Club.

Surviving him are his wife, Mrs. Elsie Barnwell Newman, and 3 brothers, Alfred M. and John F. Newman, of Fort Lauderdale, Fla., and Raymond A. Newman, of Rockville, Md.

Walter Kavanagh Angevine, M.D.

(1903–1969)

Dr. Walter K. Angevine, a general practitioner in Washington for more than 30 years, died, February 25, 1969, at Providence Hospital after a long illness. He lived and had maintained offices at 6300 13th Street, N.W.

Dr. Angevine was born in New York City, May 13, 1903. He attended New York public schools and was enrolled for 2 years in premedicine at Fordham University. He graduated in medicine from Georgetown University in 1929, and interned for a year at Gallinger Municipal (now D. C. General) Hospital.

A staff assistant at Providence Hospital, he retired in 1964.

Dr. Angevine was elected to Active membership in the Medical Society of the District of Columbia in 1937. He was a member of the American Medical Association and the Georgetown Clinical Society.

He is survived by his wife, Mrs. Anna King Angevine, and 4 sons, James E. and Edward F., of the home; John J., of Riverdale, Md.; and Walter K., of Alexandria, Va. He also leaves a sister, Mrs. Robert Fricker, of Kotonah, N. Y., and a brother, Arthur Angevine, of Lompoc, Calif.

Andrew Joseph Betz, M.D.

(1904–1969)

Dr. Andrew J. Betz, general practitioner, died at Holy Cross Hospital, Silver Spring, Md., February 5, 1969. He lived at 2906 Weller Road, Silver Spring.

Dr. Betz was born in Washington, D. C., January 28, 1904. He graduated from Gonzaga High School and from Georgetown University, receiving from the latter 2 degrees, Bachelor of Science in 1927 and Doctor of Medicine in 1929. He interned at Providence Hospital.

Employed by the Verterans Administration, Dr. Betz was assigned to Memphis, Tenn., from 1930 to 1932 and served at Mt. Alto, in Washington, from 1932 to 1937. He maintained offices at 5412 Colorado Avenue, N.W. before he retired in 1965. He was resident physician at the John Dixon Home during the later years of his career.

Dr. Betz was elected to Active membership in the Medical Society of the District of Columbia in 1937 and transferred to Associate in 1938. He was reëlected to Active membership in 1943. He was a member of the Georgetown Clinical Society.

Surviving him are his wife, Mrs. Neva G. Betz; a daughter, Mrs. Francis McDowell, of Rockville, Md.; and 5 sons: Thomas A. and John A., Silver Spring; Andrew J., Jr., Adelphi, Md.; James S., Seabrook, Md.; and Paul M., of Washington. He also leaves a brother, Carl M. Betz, of St. Petersburg, Fla., and 3 sisters, Mrs. Walter Currier, of Ft. Lauderdale, Fla.; Mrs. Bertha Donovan, of Hillcrest Heights, Md.; and Sister Mary Louise Cecile, of Washington.

Screening for Cancer of the Cervix—Haut

(*Continued from page 192*)

The cytopipette promises to become a valuable tool in the detection of cancer of the cervix because it brings the examination to the patient. If its use in mass-screening is governed by the above recommendations the patient response will be increased considerably.

Summary

A study was conducted by the D. C. Department of Public Health to determine the suitability of the Davis cytopipette for mass-screening for cancer of the cervix. Several practical methods of distribution were employed and compared with respect to cost and yield. The clinical findings were also presented. It is concluded that the Davis cytopipette is highly suitable for mass-screening because it brings the test to the patient.

References

1. Anderson, G., and Krakauer, K.: Irrigation smear—a new cytodiagnostic technique for the detection of cancer of the uterine cervix. Canad. Med. Ass. J., 1967, 96, 268.
2. Davis, H. J.: Irrigation smear—a cytologic method for mass population screening by mail. Amer. J. Obstet. Gynec., 1962, 84, 1017.
3. Davis, H. J.: Detection of preinvasive cancer by the irrigation smear technic. Danish Med. Bull., 1962, 9, 121.
4. Hilker, R. R. J., Carrow, L., Eggum, P. R., and Elesh, R. H.: Uterine cancer detection with self-obtained cytological specimens. CA, 1966, 16, 31.
5. Koch, F.: Population screening for cervical carcinoma in the Borough of Frederiksberg, 1962–1963. Application of the irrigation smear technique in a mass screening. Copenhagen, 1966.

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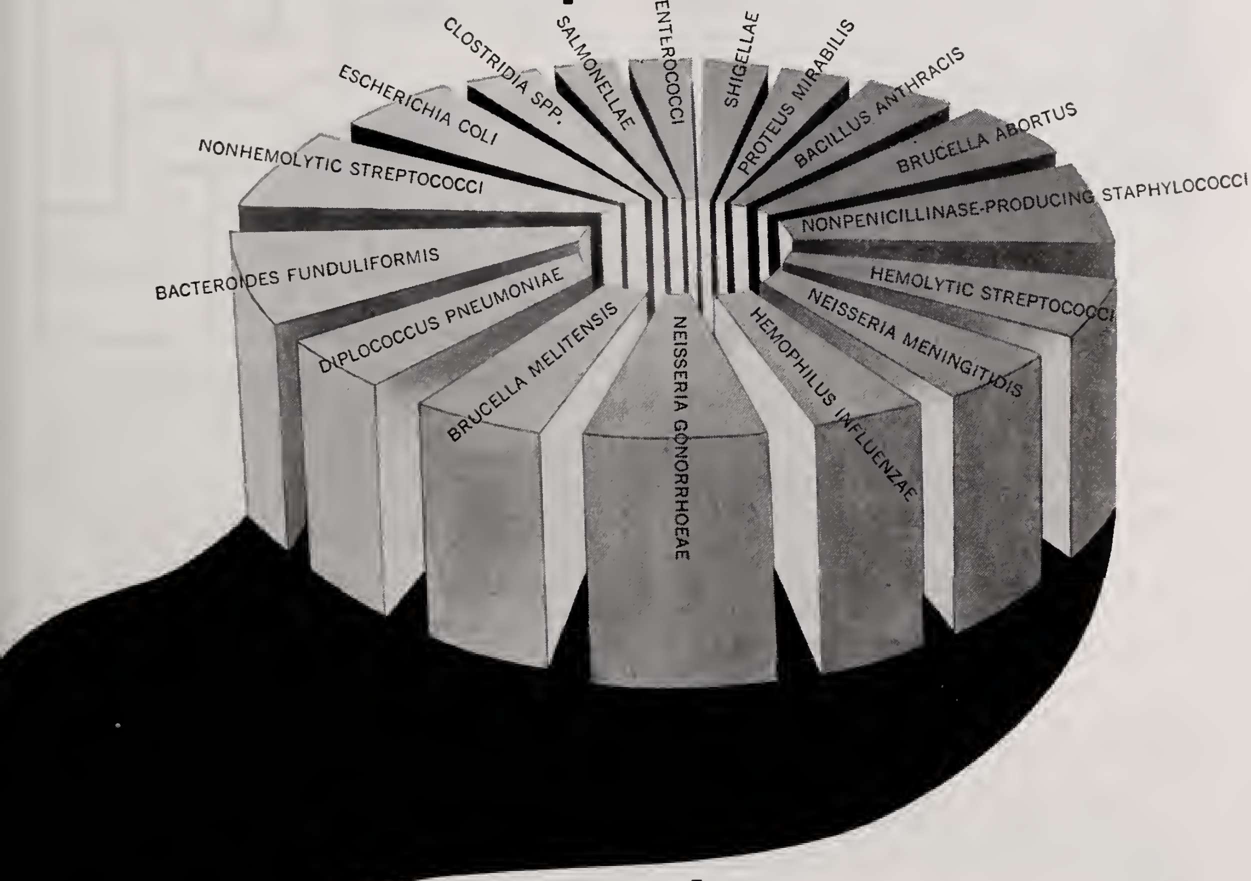

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PRESCRIBING INFORMATION. For complete information consult Official Package Circular. **Indications:** Infections due to susceptible strains of Gram-negative bacteria (including Shigellae, *S. typhosa* and other Salmonellae, *E. coli*, *H. influenzae*, *P. mirabilis*, *N. gonorrhoeae* and *N. meningitidis*) and Gram-positive bacteria (including streptococci, pneumococci and nonpenicillinase-producing staphylococci).
Contraindications: A history of allergic reactions to penicillins or cephalosporins and infections due to penicillinase-producing organisms.
Precautions. Typical penicillin-allergic reactions may occur, especially in hypersensitive patients. Mycotic or bacterial superinfections may occur. Experience in newborn and premature infants is limited and caution should be used in treatment, with frequent organ function evaluations. Safety for use in pregnancy is not established. In gonorrheal therapy, serologic tests for syphilis should be performed initially and monthly for 4 months. Assess renal, hepatic and hematopoietic function intermittently during long-term therapy.
Adverse Reactions: Skin rash, pruritus, urticaria, nausea, vomiting, diarrhea and anaphylactic reactions. Mild transient elevations of SGOT or SGPT have been noted. Black tongue has been noted in some patients receiving the Chewable Tablets.
Usual Dosage: Adults—250 or 500 mg. q. 6 h. (according to infection site and offending organisms). Children—50-100 mg./Kg./day in 3 to 4 divided doses (depending on infection site and offending organisms). Bacterial meningitis —150-200 mg./Kg./day in 6 to 8 divided doses. Children weighing more than 20 Kg. should be given an adult dose when prescribing orally. In parenteral administration, children weighing more than 40 Kg. should be given an adult dose. Beta-hemolytic streptococcal infections should be treated for at least 10 days.
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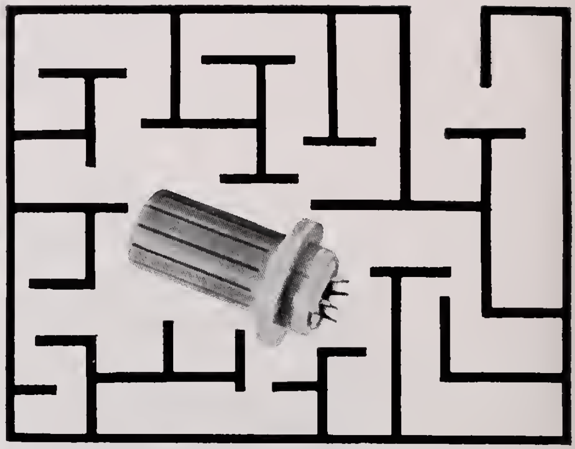

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NATIONAL & REGIONAL MEETINGS

April 20–25: American College of Physicians (50th Annual Session). Conrad Hilton Hotel, Chicago. Address: Dr. Edward C. Rosenow, Jr., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

April 21–22: American Society for Artificial Internal Organs. Chalfonte-Haddon Hall, Atlantic City, N. J. Address: Dr. Eugene F. Bernstein, Secretary-Treasurer, Department of Surgery, University of Minnesota Medical School, Minneapolis, Minn. 55455.

April 21–26: American Academy of Neurology. Washington Hilton, Washington. Address: Mr. Stanley A. Nelson, Executive Director, 4005 West 65th Street, Minneapolis, Minn. 55435.

April 26: American Medical Electroencephalographic Association. Washington-Hilton Hotel, Washington. Address: Dr. Martin L. Towler, Secretary-Treasurer, 200 University Blvd., Galveston, Texas 77550.

April 27–May 1: Southeastern Surgical Congress. Hotel Roosevelt, New Orleans. Address: Dr. A. H. Letton, Secretary-Director, 340 Boulevard, N.E., Atlanta, Ga. 30312.

April 28–29: Sixth Congress on Environmental Health Problems, sponsored by the AMA Department of Environmental Health. Drake Hotel, Chicago. Address: Mr. Frank W. Barton, Director, 535 North Dearborn Street, Chicago, Ill. 60610.

April 28–May 1: American College of Obstetricians and Gynecologists. Americana Hotel, Bal Harbour, Fla. Address: Dr. Michael Newton, Director, 79 West Monroe Street, Chicago, Ill. 60603.

May 5–9: American Psychiatric Association. Americana Hotel, Miami Beach, Fla. Address: Dr Robert S. Garbar, Executive Secretary, The Carrier Clinic, Belle Mead, N. J. 08502.

May 8–10: Medical Conference on Breast Cancer (sponsored by American Cancer Society, Cancer Control Program, USPHS). Shoreham Hotel, Washington. Address: Dr. Roald N. Grant, National Conference on Breast Cancer, 219 East 42nd Street, New York, N. Y. 10017.

May 9–11: Maryland Academy of General Practice. The Airlie House, Warrenton, Va. Address: Mrs. Dorothy E. Holman, Executive Secretary, 7609 Hillsway Road, Baltimore, Md. 21234.

May 14–17: American Gastroenterological Association. Shoreham Hotel, Washington. Address: Dr. H. D. Janowitz, Secretary, 11 East 100th Street, New York, N. Y. 10029.

May 26–28: American Ophthalmological Society. The Homestead, Hot Springs, Va. Address: Dr. Samuel D. McPherson, Jr., Secretary-Treasurer, 1110 West Main Street, Durham, N. C. 27701.

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Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue coated potassium-containing formulations immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Discontinue one week before electroshock therapy, and if depression or peptic ulcer occurs.
Use in pregnancy: Because chlorthalidone may cross the placental barrier and appear in cord blood and thiazides may appear in breast milk, this drug should be used with care in pregnant patients and nursing mothers. When used in women of childbearing age, the potential benefits of the drug should be weighed against the possible hazards to the fetus. Use of chlorthalidone may result in fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.
Precautions: Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. To avoid hypotension during surgery, discontinue therapy with this agent two weeks prior to elective surgical procedures. In emergency surgery, use, if needed, anticholinergic or adrenergic drugs or other supportive measures as indicated. Because of the possibility of progression of renal damage, periodic kidney function tests are indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria. Take particular care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Severe salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients.
Adverse Reactions: The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angiitis are possible.
Average Dosage: One tablet daily with breakfast.
Availability: Pink, single-scored tablets in bottles of 100 and 1000.
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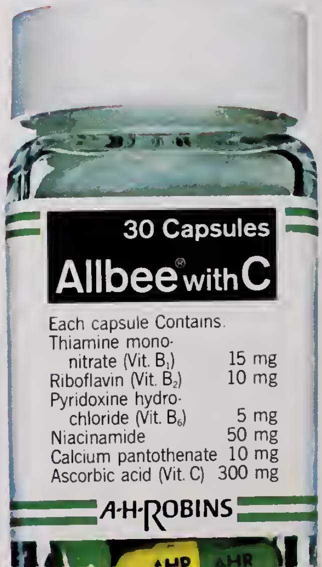
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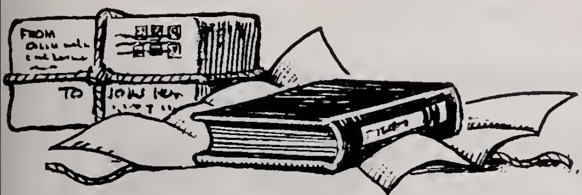


Books Received

Appraisal of Current Concepts in Anesthesiology. Volume 4. Edited and assembled by JOHN ADRIANI, M.D. Price, $12.00. Pp. 464. St. Louis: Mosby, 1968.

Alcohol and the Impaired Driver. A Manual on the Medicolegal Aspects of Chemical Tests for Intoxication. Committee on Medicolegal Problems, American Medical Association. Price, $1.50. Pp. 234. Chicago: American Medical Association, 1968.

Current Therapy 1969. Latest Approved Methods of Treatment for the Practicing Physician. Edited by HOWARD F. CONN, M.D., with 12 Consulting Editors. Price, $15.00. Pp. 945. Philadelphia: Saunders, 1969.

Todd-Sanford Clinical Diagnosis by Laboratory Methods, 14th ed. Edited by ISRAEL DAVIDSOHN, M.D., F.A.C.P., AND JOHN BERNARD HENRY, M.D. Price, $24.00. Pp. 1308, with 698 illustrations. Philadelphia: Saunders, 1969.

Atlas of External Diseases of the Eye. Volume II. Orbit, Lacrimal Apparatus, Eyelids, and Conjunctiva. DAVID D. DONALDSON, M.D. Price, $46.50. Pp. 301, with 174 figures; 112 stereoscopic views in full color on 16 View®-Master reels and a View®-Master compact viewer. St. Louis: Mosby, 1968.

Renal Disease in Childhood. JOHN A. JAMES, M.B. (Edin.), M.R.C.P., D.C.H. Price, $18.50. Pp. 371, with 104 illustrations. St. Louis: Mosby, 1968.

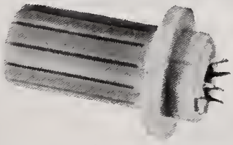
An Introduction to the History of General Surgery. RICHARD HARDAWAY MEADE, M.D. Price, $17.00. Pp. 403, illustrated. Philadelphia: Saunders, 1968.

Water and Electrolyte Metabolism and Acid-base Balance. EDWARD MUNTWYLER, PH.D. Price (paper), $5.85. Pp. 169, with 33 figures. St. Louis: Mosby, 1968.

Surgery of the Adrenal Glands. LAWRENCE W. O'NEAL, M.D. Price, $19.50. Pp. 295, with 212 illustrations. St. Louis: Mosby, 1968.

Atlas of Ear Surgery. WILLIAM H. SAUNDERS, M.D., AND MICHAEL M. PAPARELLA, M.D. Price, $27.50. Pp. 363, with 163 plates of illustrations; line drawings by Beverly A. Etter. St. Louis: Mosby, 1968.

Diagnosis of Surgical Disease, Volumes I, II and III. RICHARD T. SHACKELFORD, M.D., with 22 contributors. Price, 3-volume set, $72.50. Pp. Vol. I, 1–780; Vol. II, 781–1510; Vol. III, 1511–2131. Illustrated and indexed. Philadelphia: Saunders, 1968.



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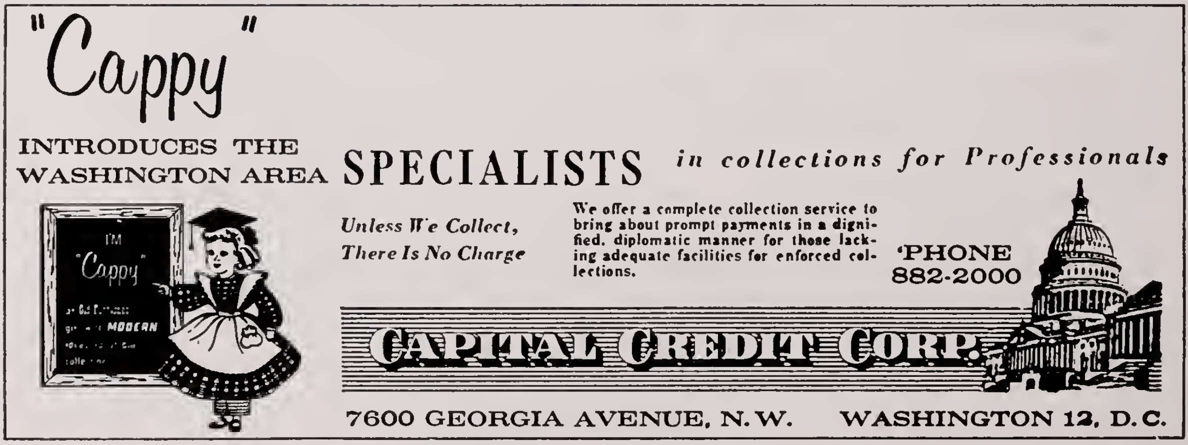

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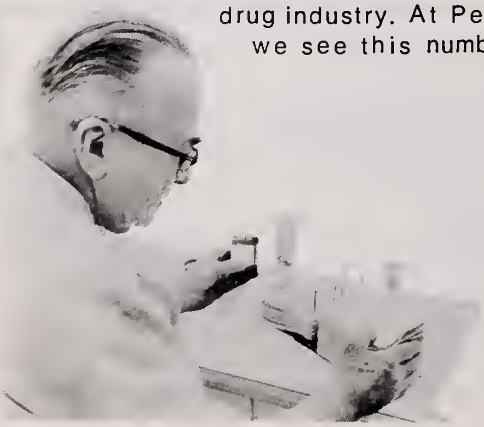

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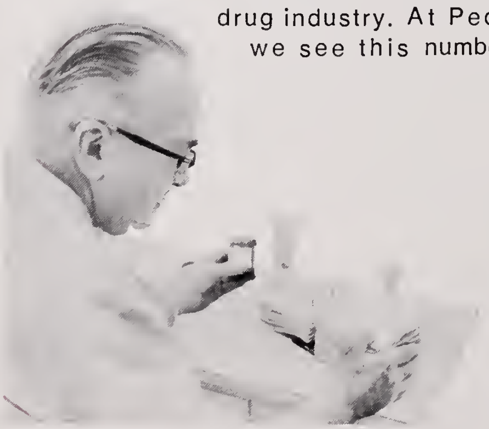

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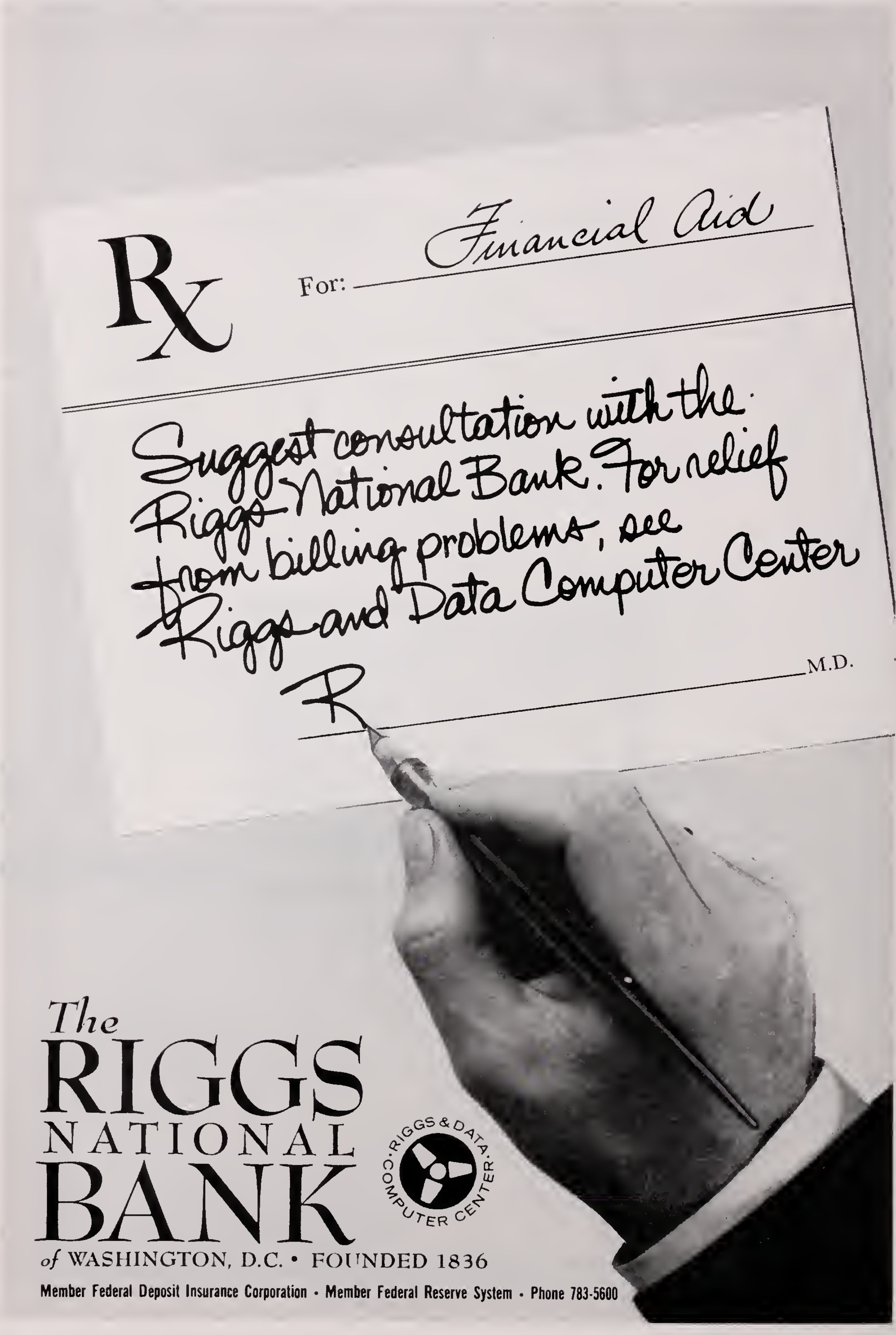

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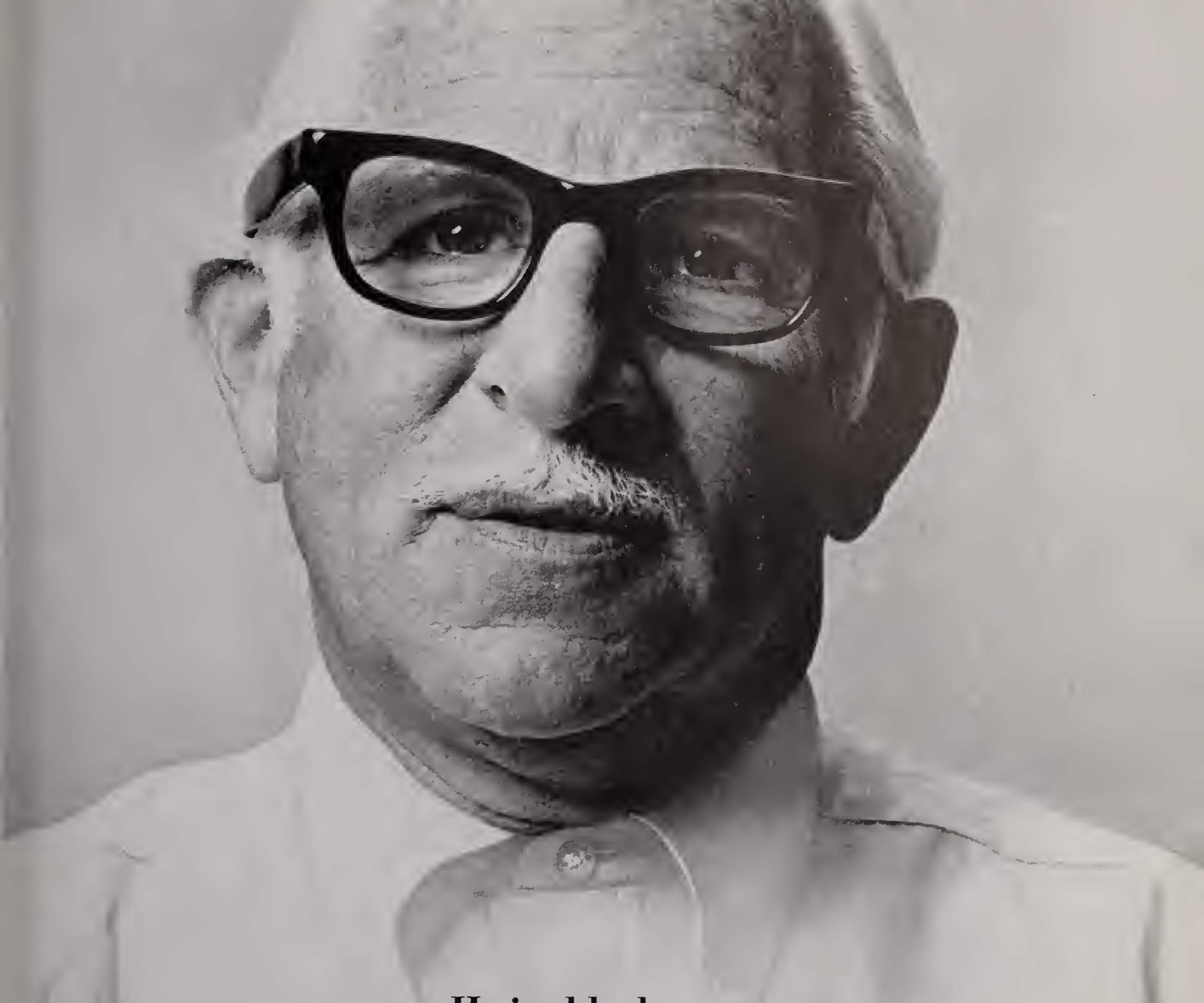

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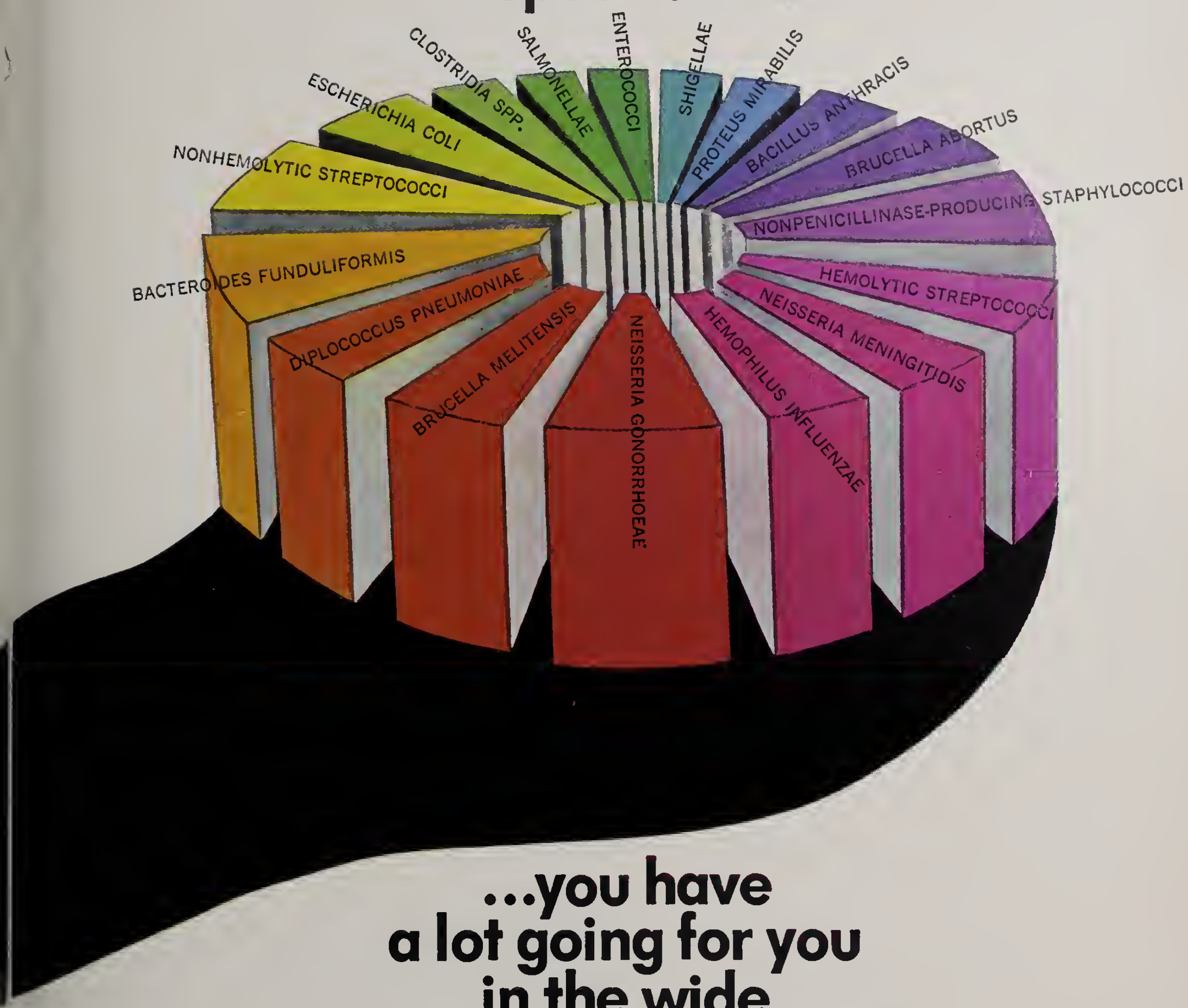
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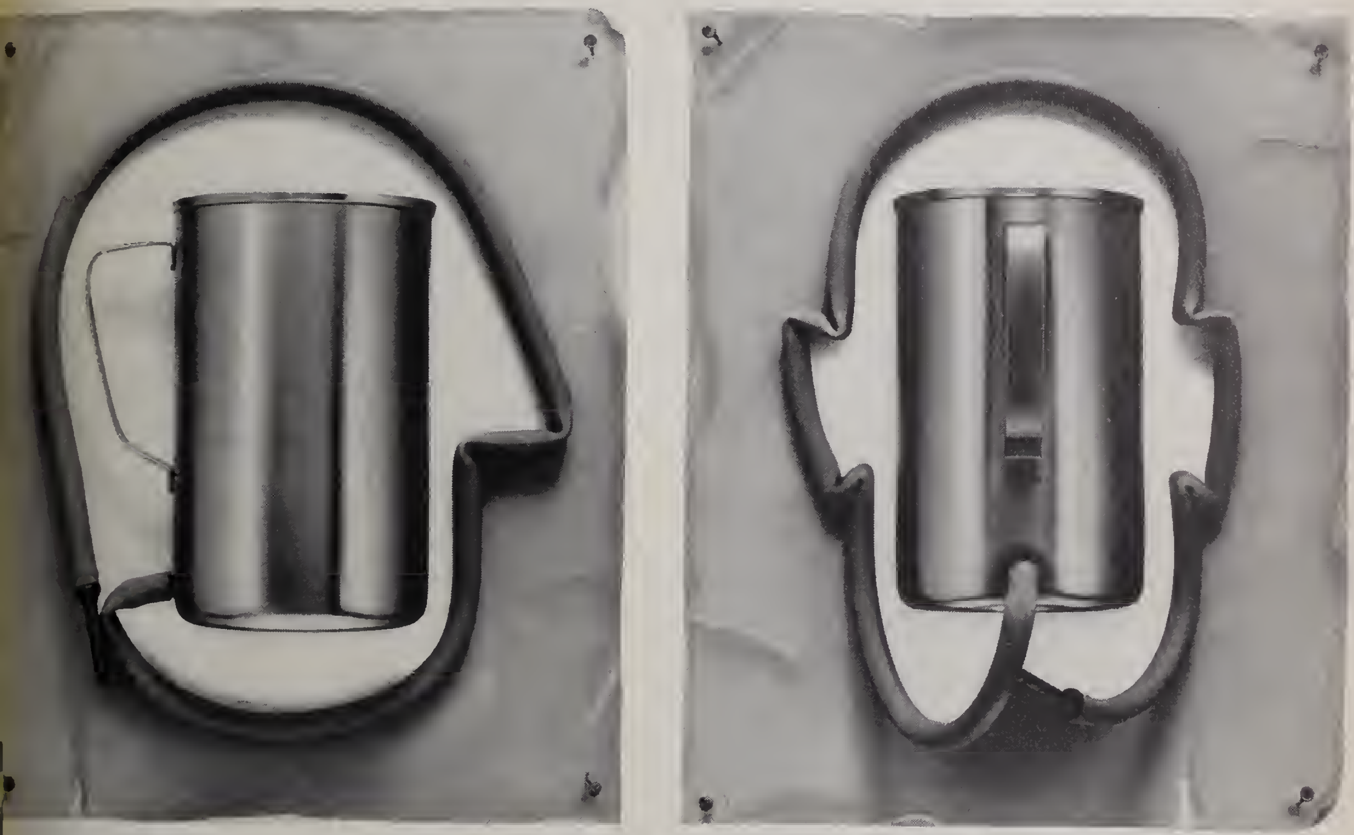

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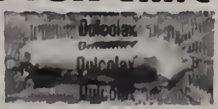

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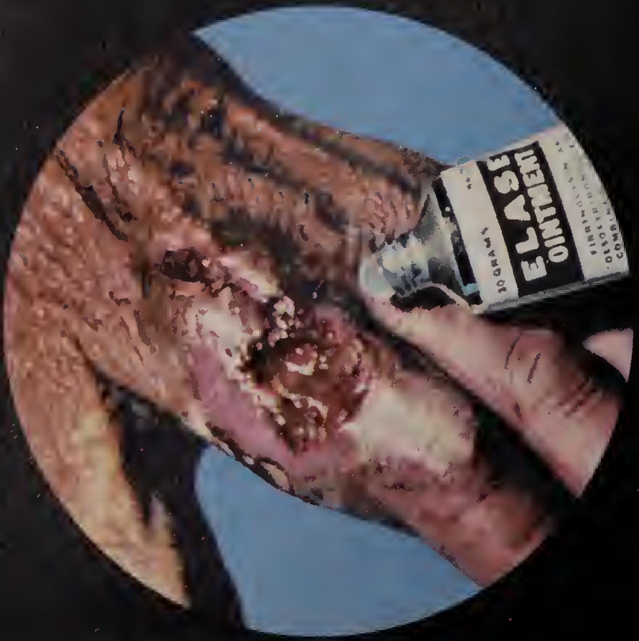

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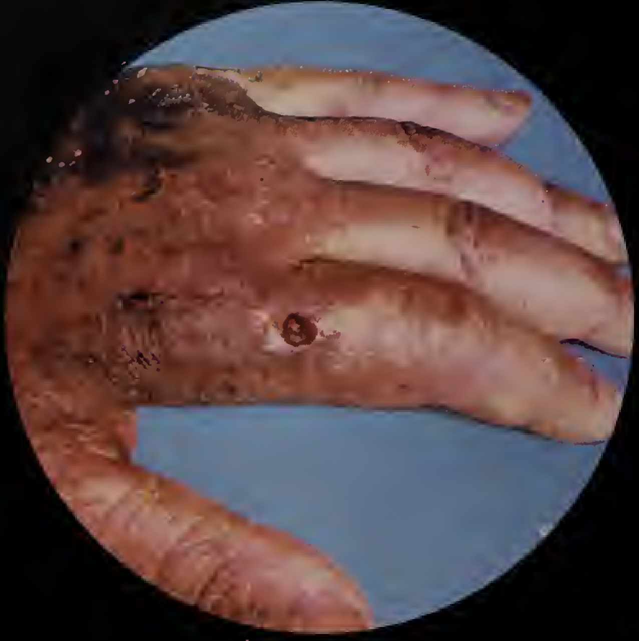

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Book Reviews

Appraisal of Current Concepts in Anesthesiology. Volume 4. Edited by JOHN ADRIANI, M.D. Price, $12.00. Pp. 464. St. Louis: Mosby, 1968.

This volume is a compilation of summaries and reviews of topics of interest to the clinical anesthesiologist. It has been prepared by staff members and trainees at the Anesthesia Department of Charity Hospital of Louisiana and is edited by one of the leading authorities in the field of anesthesia, Dr. John Adriani.

Dr. Adriani indicates in the preface that this series is not intended as an exhaustive review of these subjects. It is not directed to research workers or to those in advanced training in anesthesia. It is written by clinicians in clinical language and is intended primarily for clinicians.

The topics selected for this volume are pertinent and up-to-date. A number of these topics are still being debated in anesthesia meetings. Among these are "metabolism of inert volatile anesthetics," "diffusion of gases and vapors into and from hollow viscera and gas pockets," "effects of succinylcholine on blood levels of potassium," "placental transfer of local anesthetics," "halothane versus cyclopropane anesthesia for patients in shock," and "beta-adrenergic blockade: propranolol and arrhythmias."

In general these reviews are well outlined, interesting and accurate. In a number of instances editorial comments are noteworthy and appraise the clinical application of the data presented. The major shortcoming of this book is that the content of a particular chapter depends primarily on the article or articles selected by that author for review. In addition, remarks may conflict in 2 related chapters which have been written apparently by 2 different authors.

For example, the theme in Chapter 4, Metabolism of Inert Volatile Anesthetics, is that "so-called inert volatile anesthetics do undergo some degree of biodegradation in the body." References are included up to 1967. Yet, in Chapter 6 the statement is made: "Since the gases and vapors used for inhalation anesthesia are inert within the body . . . ." In the section on rise in potassium in the burned patient after succinylcholine, one reference by Belin is quoted from an issue of *Anesthesiology*, whereas another reference (Lowenstein), appearing in the same issue but with an opposite viewpoint, is not mentioned.

This holds true for the section devoted to placental transfer of local anesthetics. The very important finding in 1965 by Morishima that mepivacaine (Carbocaine®) crosses the placenta and depresses the newborn is not even mentioned. One would think that this would be useful to a clinician.

Despite these inconsistencies and oversights, this book is definitely recommended for the audience that has been selected—the clinical trainee and clinical anesthesiologist. As good and as useful as this book is, it could have been even better and attracted an even wider audience with only a little more work.

BURTON S. EPSTEIN, M.D.

Questions and Answers on Contact Lens Practice. JACK HARTSTEIN, B.S. (Med.), O.D., M.D. Price, $10.75. Pp. 199, with 90 illustrations. St. Louis: Mosby, 1968.

The author's question-and-answer format presents a large amount of important information in a very palatable form. A wide field of topics is covered, and the opinions of other authors are frequently quoted, adding depth to the issues discussed. The concise units of information allow us to come away with definite ideas rather than nebulous memories of the topics presented.

This book certainly belongs in the library of every resident and practicing ophthalmologist.

ERNEST ZIMMERMAN, M.D.

Women in Medicine. Published for The Josiah Macy, Jr. Foundation. CAROL LOPATE. Price, $5.95. Pp. 204. Baltimore: Johns Hopkins Press, 1968.

This slender volume is a useful addition to the present body of statistics and other information about medicine as a career for women. Discarding the time-worn approach of women's right to enter the medical profession and to enjoy equality of opportunities, the author undertakes an examination of the motivation, adaptation, and other emotional factors that guide and sustain women who enter or hope to enter a traditionally male profession.

From study of previous reports relating to her subject and from personal interviews, the author sees the modern woman in medicine as essentially feminine, planning to marry and have children, and willing to face the dual responsibility of homemaking and medical practice. The typical woman in medicine today is less militant and more subtle than the trail-blazers of the late 19th and early 20th centuries. In the modern vernacular she does "her own thing," putting less

Book Reviews (*Continued*)

emphasis on competition with her male colleagues and more on complementing their professional endeavors.

Prejudice against women in medicine exists today as always. Only the reasons differ from the past. In this period of medical manpower shortage, opponents to women in medicine tend to cite the fact that a woman physician may work fewer hours and hence see fewer patients than her male counterpart. For this reason and others not wholly valid, the author sees little chance that the number of women admitted to medical schools will increase much beyond the present 8 or 9 per cent in the near future.

The need for improvement in early high school and college guidance counseling is recognized, although many young women, particularly those whose mothers have business or professional careers, have sufficient information and motivation to plan for a medical career. The higher attrition rate among women medical students might be evened by the medical schools through better counseling of women and by more attention to teaching methods and the curricula, which are often outmoded and boring. The author sees some hope in the increasing number of women faculty members in medical schools. They conceivably might be more sensitive than men to the problems and frustrations of women students.

Despite the waste of talent in prolonged delay, opinions in the United States with respect to sexual roles must change before more talented women will, of their own choice, seek to become physicians. Housekeeping and motherhood still linger on as woman's ideal place in a complacent society. In addition to changes in a philosophy that is now wasteful of talent, the professional woman needs other assists to lessen specific difficulties. Among these are an understanding mate, flexible and part-time schedules of training and work while children are young, better child-care facilities and more trained household workers, added tax deductions for working mothers, and more openings in types of practice that provide consistent free time, such as partnerships and groups.

This book should be read by young women contemplating a medical career and by guidance counselors, medical educators, and physicians in practice. The role of women should be under constant scrutiny if this country is to enjoy the best available talents.

Josephine E. Renshaw, M.D.

Communicable and Infectious Diseases: Diagnosis, Prevention, Treatment, 6th ed. Franklin H. Top, Sr., M.D., M.P.H., F.A.C.P., F.A.A.P., F.A.P.H., and 35 Collaborators. Price, $28.50. Pp. 755, with 135 illustrations and 15 color plates. St. Louis: Mosby, 1968.

This book provides a readable and comprehensive review of the communicable diseases of public health importance, including epidemiology, clinical and laboratory manifestations, diagnosis, treatment, and prevention. Many chapters have been updated since the last edition, published in 1964. However, many newer developments and findings have not been included in this edition, and the changing occurrence and importance of certain diseases are not reflected. For example, the chapter on malaria fails to mention the new importance of the disease because of its importation by troops returning from Viet Nam and the emergence of chloroquine-resistant falciparum strains.

The epidemiology of viral hepatitis is inadequately treated. The transmission of infectious hepatitis by the ingestion of contaminated raw shellfish and the great increase in serum hepatitis among narcotic addicts are not discussed.

The chapter on measles does not strongly recommend routine immunization despite the current emphasis on measles eradication. Data on the declining incidence and virtual eradication in some areas of the country are not presented.

The chapter on food poisoning contains sections on staphylococcal and clostridial food poisoning but does not include Salmonella, one of the most frequent causes of food poisoning. Most of the chapter on salmonellosis is devoted to typhoid and paratyphoid, which are of small and declining importance, while Salmonella gastroenteritis, which has become a serious and growing public health problem, is not adequately treated. The authors recommend that Salmonella carriers be treated with antibiotics despite recent findings that this may only prolong the carrier state. The recommended treatment of shigellosis has also not been updated.

A good job has been done in covering tuberculosis from its medical, social, and epidemiological aspects. However, frequent use of the term "reinfection tuberculosis" seems out of date. The author states that "particular emphasis (in case-finding) should be placed on individuals 50 years of age or older, especially white males." He undoubtedly meant "nonwhite."

The chapter on gonorrhea is exceptionally well written and covers the modern management of this disease fully. The chapter on ophthalmia neonatorum is particularly well done. The author clearly describes the symptoms and management of this disease, which varies according to the etiological agent.

On the other hand, the chapter on syphilis is a recital of facts which was contained in textbooks written more than 15 years ago. Statements such as "adenitis is present in the majority of cases and is quite characteristic," "syphilitic iritis is present in 4 per cent of cases of secondary syphilis," "periostitis is present in 1–4 per cent of cases, more prevalent in Negroes," and "following a period of latency, the late serious phenomena of syphilis develop" are spread throughout the presentation. The above statements do not describe clinical syphilis as it exists today. We no longer see generalized adenopathy, iritis, periostitis, or late cutaneous manifestations of this disease.

I hope the next edition will be brought entirely up-to-date.

Charles R. Hayman, M.D.

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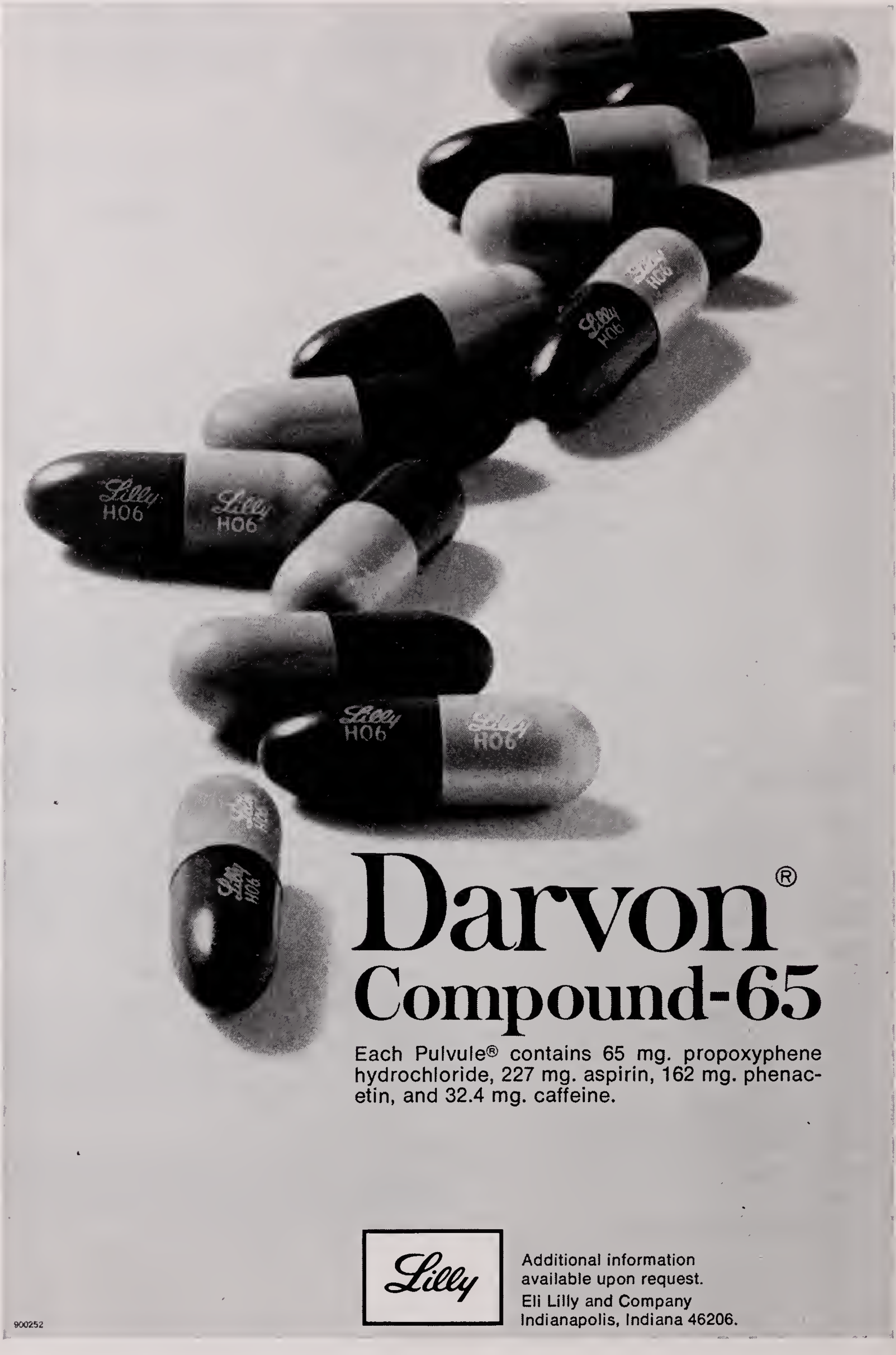
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May 1969
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Intra-aortic Phase-shift Balloon-pumping in Cardiogenic Shock: Laboratory and Clinical Observations

MAJOR WILLIAM Z. YAHR, USAF, MC,[*,†] ALFRED N. BUTNER, M.D.,[*] JOSEPH S. KRAKAUER, M.D.,[*] STEVEN J. PHILLIPS, M.D.,[*] PAUL S. FREED, M.S.,[*] DOV JARON, Ph.D.[*] AND ADRIAN KANTROWITZ, M.D.[*]

MORE THAN 100,000 AMERICANS are expected to die during this year as a result of cardiogenic shock associated with myocardial infarction.[1] These deaths will occur in spite of increasing use of coronary care units, potent new drugs, electronic pacemakers, and improved respirators. Important as these new modalities have become in the management of acute myocardial infarction, they have not contributed to a significant improvement in the management of the complication of cardiogenic shock.

An increasing body of laboratory and clinical data supports the belief that the primary pathophysiologic deficit in this syndrome is pump failure.[1-4] If this is correct, mechanical circulatory support might be of value for these patients.

To investigate this possibility, intra-aortic balloon-pumping, originally suggested by Moulopoulos et al[5] and by Clauss and associates,[6] was selected for study. The results in animal studies performed with the use of a balloon-pumping system developed in this laboratory[7] indicated that experimental cardiogenic shock could be reversed and that pumping could be continued for prolonged periods without deleterious effects on either the experimental subject or the assist system. A clinical trial was therefore initiated. In this report the results of additional experimental studies of balloon-pumping are reviewed, and an attempt is made to correlate some of the laboratory and clinical observations.

Animal Studies

Aortic, femoral arterial, atrial, left ventricular and pulmonary artery pressures were measured in open-chest mongrel dogs. Phasic and mean blood flows in a branch of the left coronary artery and the pulmonary artery were determined with a BL-610 Biotronex Laboratory pulsed logic electromagnetic flowmeter.[‡] A BL-620 computer[‡] was used to determine stroke volume from the flow curves and the integral (tension-time index, TTI),[8] and the first derivative (dp/dt) of the left ventricular and aortic pressure curves.

The cardiac output was also determined by the Fick method in several experiments. Blood was drawn anaerobically from the pulmonary artery and left atrium and analyzed in an oximeter.[§] The respirator exhaust was drawn into an oxygen consumption analyzer.[‖]

Peripheral resistance was determined by dividing the mean systemic pressure (central aortic mean pressure minus right atrial mean pressure) by the cardiac output.

Cardiogenic shock was induced by ligating a major branch of the left coronary artery.[9, 10] Cardiogenic shock was defined as a syndrome manifested by a reduction in cardiac output of more than 40 per cent, elevation of left ventricular end diastolic pressure above 12 mm. Hg, reduction in systolic pressure of 30 per cent or more, and increase in peripheral resistance.[7, 11] In addition, decreased left ventricular dp/dt, TTI, coronary flow, and hypoxia and metabolic acidosis were present.

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[*] Department of Surgery, Maimonides Medical Center, Brooklyn, N. Y. This work was supported by USPHS Grant HE-11173. Reprint requests to Dr. Kantrowitz, 4802 Tenth Avenue, Brooklyn, N. Y. 11219.

[†] Present address: Malcolm Grow Hospital, Andrews Air Force Base, Washington, D. C. 20331.

[‡] Biotronex Laboratory, Inc., Silver Spring, Md.

[§] American Optical Co., Buffalo, N. Y.

[‖] Oxford Instrument Co., Jackson, Miss.

Clinical Investigation

Patients in terminal cardiogenic shock due to myocardial infarction were considered as candidates for treatment in a clinical trial of the method. Myocardial infarction was diagnosed on the basis of clinical and electrocardiographic findings. Elevation of blood enzyme levels (serum glutamic oxaloacetic transaminase, serum creatinine phosphokinase) and progression of the electrocardiographic findings confirmed the initial diagnosis.

In these patients right atrial pressure was measured with a water manometer attached to a polyethylene catheter inserted into the subclavian vein. Central aortic pressure was measured with a cannula introduced into the radial or the brachial artery and passed to the arch. Indocyanine green, introduced into the right atrium and withdrawn from the arterial cannula through a densitometer computer system,* was used to determine cardiac output in 3 cases. Serial arterial-venous oxygen estimates were made. In one patient a differentiator† was used to determine the dp/dt of the aortic pressure. The aortic TTI was measured planimetrically. Urine output and blood gases were measured, as were standard blood chemical parameters.

Cardiogenic shock was defined as a syndrome manifested by 2 or more of the following: central arterial hypotension (blood pressure below 80 mm. Hg systolic), generalized sympathetic hyperactivity (cold, pale, moist skin, cyanotic nailbeds, fear), mixed venous O_2 saturation below 60 per cent, and depressed cardiac output, all in the face of maximal pressor amine therapy. Pulmonary congestion, as evidenced by pink, frothy sputum or rales, and persistent oliguria were usually present. The central venous pressure was elevated in most patients.[12, 13] Intensive treatment with vasopressors (metaraminol bitartrate, levarterenol bitartrate), inotropic agents (isoproterenol hydrochloride), buffers (sodium bicarbonate or Tham-E®), digitalis glycosides, transvenous pacing, increased inspired oxygen concentration, and diuretics (ethacrynic acid), usually in combination, had failed. All patients were initially treated on the medical service. When the medical staff concluded that the standard therapy had become ineffective and that the outlook was grave, the patients were transferred to the study unit for phase-shift pumping.

Therapy

Animal studies. After cardiogenic shock was evident, mechanical assistance was instituted and hemodynamic changes measured. In 20 dogs intra-aortic phase-shift balloon-pumping was administered. A polyurethane balloon, 7 ml. in wall thickness, 14 cm. in length, and 14 ml. in volume when expanded, was introducted through a femoral arteriotomy and positioned in the descending thoracic aorta. A solenoid valve timed from the gating signal of a Tektronix 565 Oscilloscope admitted helium into the balloon at the beginning of left ventricular diastole and allowed the balloon to collapse passively at the onset of left ventricular systole. The oscilloscope was triggered from the left ventricular pressure curve. In 5 dogs chlorpromazine (0.2 mg./Kg.) was given in addition to mechanical assistance. No buffering, antiarrhythmic, or inotropic agents were employed.

Clinical Investigation

After medical therapy had failed balloon-pumping was started. The ECG was displayed on a Tektronix 565 Oscilloscope and utilized as the trigger signal. Except that the pumping chamber was 32 ml. in expanded volume, the balloon-pumping apparatus was identical to that used in the laboratory. To prevent prolonged ischemia of the lower extremity the balloon was introduced through a Dacron® graft and then into the artery. The graft was then sutured end-to-side to the vessel after pumping was started. Previously initiated treatment to correct metabolic acidosis, electrolyte imbalance, anuria, respiratory insufficiency, and arrhythmias, was continued. Vasopressors were usually discontinued as balloon-pumping began. Heparin, 50 mg., was given at this time and every 4 hours thereafter.

Results

Animal studies. The cardiac outputs observed in control dog serve as a base line for observations after phase-shift balloon-pumping.

Mechanical assistance increased cardiac output from 53 ± 3.8 to 79 ± 15.4 per cent of normal (figure 1). The left ventricular end-diastolic pressure fell from 17 ± 7.6 to 10 ± 3.8 mm. Hg. The left ventricular dp/dt increased by 25 per cent on the average, while the left ventricular TTI fell by 25 per cent on the average. In addition, peripheral resistance was decreased by 38 per cent.

In the 5 dogs given chlorpromazine during balloon-pumping the cardiac output rose from

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* Gilford Instrument Laboratories, Oberlin, Ohio.

† Model BL-620, Biotronex Laboratory, Inc., Silver Spring, Md.

49 ± 10.3 to 90 ± 12.8 per cent of normal. Coronary blood flow uniformly increased with pumping, from 42 ± 23 to 84 ± 27 ml./min.,[13] and from 40 ± 12.8 to 102 ± 33 ml./min. when chlorpromazine was given during balloon-pumping.

Statistical analysis disclosed that the differences among control animals, those in experimental shock, and those undergoing balloon-pumping, with or without chlorpromazine, were all significant ($p < 0.01$ by the T test).

Clinical investigation. Of 27 patients evaluated, 11 did not undergo balloon-pumping. In 2 an abdominal aortic aneurysm prevented passage of the pumping chamber. Three patients died before the procedure could be initiated. In the remaining 6 cases medical treatment was continued after evaluation. All of these patients died.

The remaining 13 patients all recovered from cardiogenic shock. Of these, 6 died from 8 hours to 7 days after pumping. Noncardiac causes (cerebrovascular accident, pulmonary and renal complications) accounted for most of these deaths. One patient, who suddenly became agitated after pumping, struggled to get out of bed 8 hours after the assist procedure was discontinued. A cardiac arrest then occurred from which he could not be resuscitated.

Seven patients were discharged from the hospital. Two of these 7 patients had transient complications at the arteriotomy site which were corrected by treatment.

Evidence of improvement in hemodynamic parameters during pumping was also obtained. In 3 cases in which cardiac output before and after pumping was measured, an average increase of 100 per cent was obtained. The myocardial TTI was reduced by an average of 20 per cent after pumping was started. In one case in which aortic dp/dt was measured this parameter decreased as failure progressed but increased after treatment (figure 2).

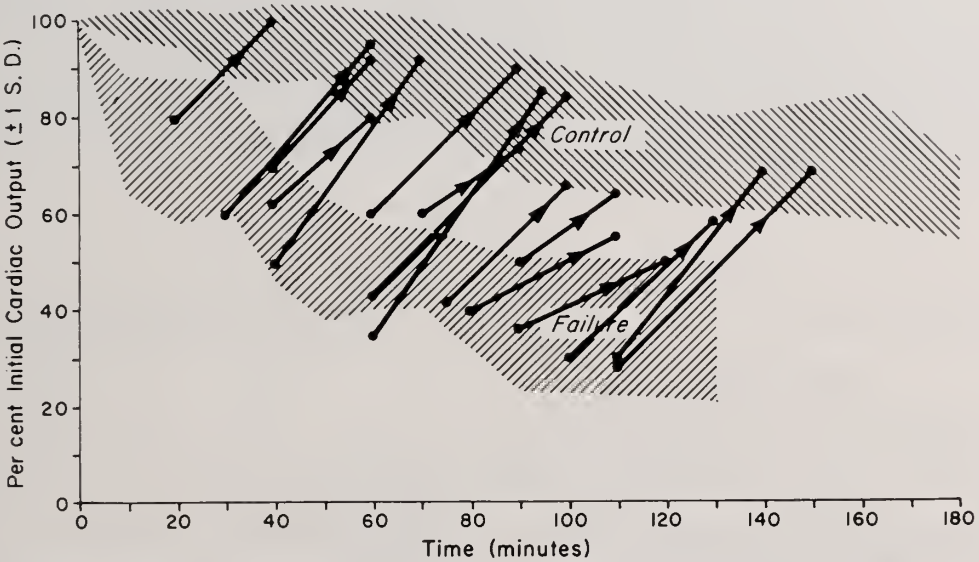

FIG. 1. Cardiac output in experimental cardiogenic shock. Effect of 20–40 minutes' phase-shift balloon-pumping.

In the 16 patients who received mechanical assistance cardiogenic shock was reversed during pumping in all but 1, as reported previously.[2] Three patients died during temporary interruptions of pumping. In one of these cases a demand pacing signal induced ventricular fibrillation which could not be reversed. A patient treated early in the series died during a brief interruption of the assist procedure to permit advancing the pumping chamber higher in the aorta. Fulminating pulmonary edema developed immediately, followed closely by ventricular fibrillation and irreversible cardiac arrest. In the third patient difficulties in synchronizing the pump and cardiac cycles required transient discontinuation of pumping, and the patient died during this interval.

Clinical signs of pulmonary edema were not present during pumping. Improvement in skin color and temperature, sensorium, and urine output were usually observed.

Pumping was continued until the patients were hemodynamically stable. The duration of circulatory assistance ranged from 3¾ hours to 96 hours. There was no failure of the pumping system's components, and there were no anatomic or hema-

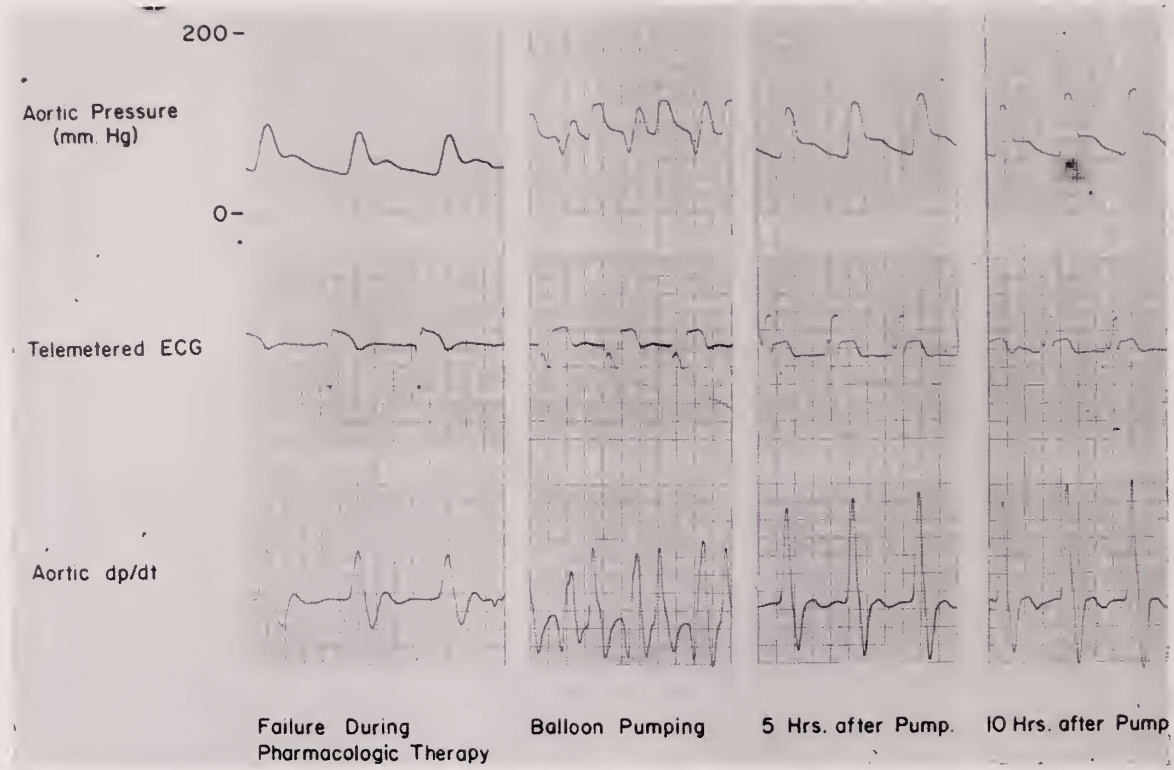

FIG. 2. Aortic dp/dt before, during, and after phase-shift balloon-pumping in clinical cardiogenic shock.

tologic indications of significant damage resulting from the assist procedure.

Discussion

Observations in dogs after interruption of a major coronary vessel and in patients with cardiogenic shock[1, 12, 13] are reviewed in table 1. Both groups show depression in cardiac output, systolic blood pressure, blood pH and arterial pO_2, and elevation in left ventricular end-diastolic pressure and peripheral resistance. The changes observed as a result of pumping are presented in table 2.

TABLE 1: Hemodynamic Parameters during Cardiogenic Shock in Patients and Canine Subjects

	Patients[1,12,13]	Dogs
Cardiac output	50% normal	50% normal
Left ventricular pressure (mm. Hg)		
End diastolic	20–30	17
Systolic	–30	–30
Right atrial pressure (cm. H_2O)	6–30	6
pO_2 (mm. Hg)	50–70	60
pH	7.1–7.3	7.1–7.3
Peripheral resistance (increase)	0–40%	38%

TABLE 2: Hemodynamic Parameters during Phase-shift Balloon-pumping in Human and Canine Cardiogenic Shock

	Patients *Per cent*	Dogs *Per cent*
Cardiac output	+100	+60
Aortic tension-time index	−22	−20
Left ventricular EDP	*	−40
Coronary blood flow	*	+100
Aortic dp/dt		25
L.V. dp/dt	*	25
Peripheral resistance		38

* Not measured.

In accounting for the effects of balloon-pumping in patients, extrapolations from canine studies are helpful. Determinations readily performed in the laboratory may entail excessive risk in the patient with medically refractory cardiogenic shock. Such measurements include coronary artery flows, left-ventricular pressures, and, on occasion, even cardiac outputs obtained by the dye-dilution method in patients apparently on the verge of cardiac arrest. The data summarized in tables 1 and 2 suggest that it is reasonable to attempt extrapolation from results in canine shock preparations.

The observed clinical signs of cardiogenic shock—

increased peripheral resistance, usually further increased as a result of exogenous vasoconstrictors, oliguria, mental confusion, and pulmonary edema—are directly related to failure of the left ventricle as a pump. In an effort to improve its pumping ability the body releases large amounts of endogenous vasoactive materials. These elevate central aortic pressure by increasing peripheral resistance and augment myocardial contractility. However, after the myocardium has decompensated these mechanisms fail.

In hypotensive shock following myocardial infarction, when the mean aortic pressure falls to low levels, the difference between the perfusion pressure-gradient (mean aortic diastolic pressure minus left ventricular end diastolic pressure) and the critical closing pressure[1] of the coronary bed becomes small. Thus, at the typical pressures observed in human cardiogenic shock, when the mean aortic diastolic pressure is between 50 and 70 mm. Hg and the left ventricular end diastolic pressure is between 20 and 30 mm. Hg, the perfusion gradient would be approximately 30–50 mm. Hg. The critical closing pressure of the human coronary bed has been estimated by Braunwald to approximate 40 mm. Hg, and our experiments indicate that the range in dogs is similar (figure 3). In addition, in dogs coronary flow is markedly diminished (figure 3). When balloon-pumping is instituted the mean aortic pressure is elevated, the left ventricular end diastolic pressure is lowered, and the perfusion pressure gradient increases. As a result, coronary flow is markedly improved (figures 3 and 4).[14] The pressure-flow curves for the canine coronary artery, and also the theoretical curve drawn by Braunwald for the human coronary artery,[1] indicate that above the critical closing pressure small increases in pressure result in relatively large increases in flow (figure 3). Since the changes in the central arotic pressure curve due to balloon-pumping in patients correspond to those seen in the dogs, it seems reasonable to assume that coronary flow in patients increases when the arterial pressure is raised, as in dogs.

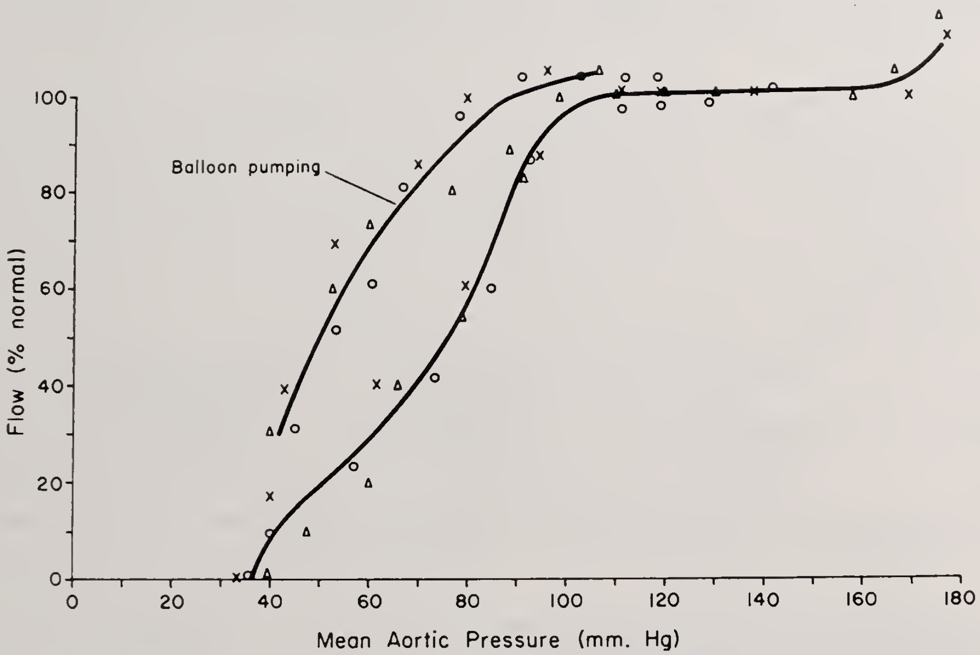

FIG. 3. Coronary flow in canine cardiogenic shock before and during balloon-pumping.

In the laboratory, left ventricular pressures as well as left ventricular and aortic dp/dt were measured. Although the maximal dp/dt in the aorta was lower than that in the ventricle, changes in this parameter in the ventricle were associated with corresponding changes of the same indicator in the aorta. Accordingly, it seems reasonable to postulate that increase in aortic dp/dt as a result of phase-shift pumping (figure 2) is associated with increase in left ventricular dp/dt.[15]

Another element in explaining the effectiveness of phase-shift balloon-pumping in patients is suggested by observations relating myocardial oxygen consumption to the peak systolic pressure of the left ventricle.[8, 16] Braunwald et al[16] and Sarnoff et al[8] found that large quantities of blood could be moved through the left ventricle at minimal rates of oxygen utilization if the peak left-ventricular pressure could be kept at a low level. In cardiogenic shock there is an increase in anaerobic myocardial metabolism because of decreased coronary flow.[15] As has already been discussed, phase-shift pumping increases coronary flow, allowing an increased oxygen supply to be delivered to the deprived myocardium. In addition, phase-shift pumping decreases the absolute requirement for oxygen since it lowers the peak left-ventricular pressure.[15]

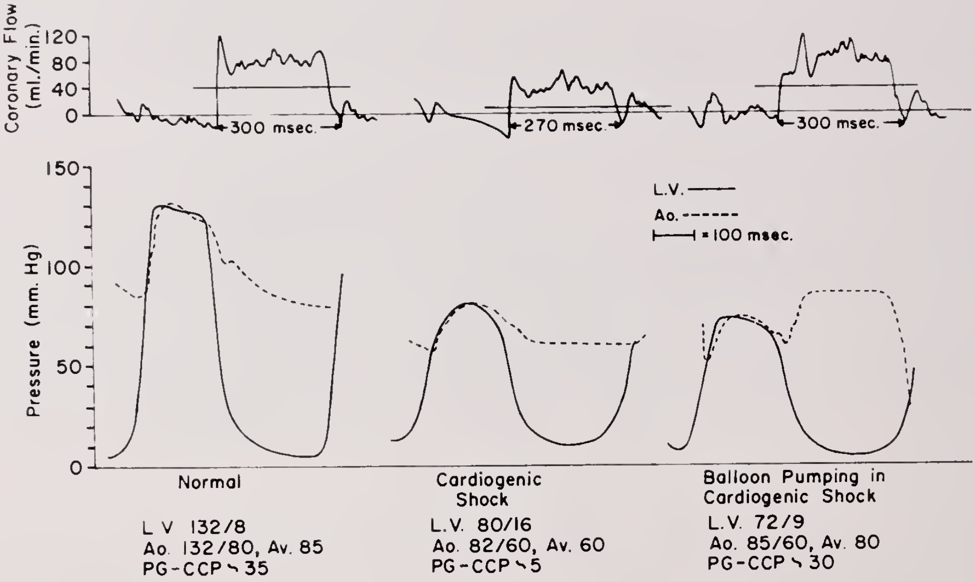

FIG. 4. Coronary flow and left-ventricular and aortic pressures in normal dogs, those in experimental cardiogenic shock, and those subjected to phase-shift balloon-pumping.

The clinical experience reviewed in this report, though limited, strongly suggests that phase-shift pumping is an effective treatment in cardiogenic shock. All patients were moribund despite maximal efforts with pharmacologic therapy when mechanical assistance was started. Nevertheless, all but 1 were resuscitated and no longer in shock during pumping. Although some patients went on to die, the short-term and the long-term survival, 81 and 44 per cent respectively, compare favorably with those obtained with earlier therapies. It is possible that initiation of mechanical assistance earlier in the course of cardiogenic shock will further improve the results.

Summary

Data have been presented indicating the comparability of responses of a canine cardiogenic-shock preparation and patients in shock after myocardial infarction. Analogies between the laboratory and the clinical situations are helpful in elucidating the mechanisms whereby phase-shift intra-aortic balloon-pumping is of benefit in clinical shock secondary to ischemic left-ventricular failure. The initial results of phase-shift balloon-pump therapy for patients in medically refractory cardiogenic shock have been encouraging: cardiogenic shock was reversed in 94 per cent of patients; the short-term survival rate was 81 per cent; and the long-term survival rate, or salvage rate, was 44 per cent.

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(*Continued on page 256*)

New Techniques for Accurate Diagnosis and Management of Hiatal Hernia and Gastroesophageal Reflux

PERRY HOOKMAN, M.D.*

HEARTBURN is a very common symptom. It may occur as an isolated symptom or as a manifestation of a variety of many abnormalities which include hiatal hernia, pregnancy, peptic ulcer, pyloric obstruction, etc. Heartburn is often thought to be a manifestation of an esophageal disorder. It can be recognized as a sometimes severe, often mild, prolonged or intermittent retrosternal distress, many times characterized by a "burning" sensation. There seem to be 2 primary factors in this disorder, a reflux of material which is noxious to the distal esophagus and an abnormally reactive esophagus producing inflammatory and/or motility changes in response to stimuli.

The treatment of hiatal hernia is uniformly unsatisfactory,[1] although in relatively mild cases treatment is usually successful with simple medical management. The main problem occurs when the symptoms are unremitting and when simple medical procedures seem to fail. Surgical treatment is not always satisfactory. Studies which have followed surgery have shown apparent relief in 12 to 80 per cent of the patients in some series. The results are poor, however, on close examination if the success of the surgical maneuver is indexed against a recurrence of symptoms.[2, 3, 4] The incidence of failure is lower when one uses only simple anatomic criteria, either radiologically or operatively. It has been indicated that the current surgical repair technique is in about the same state as repair of inguinal hernia at the time of Bassini and Halsted in 1888, when the recurrence rates were lower than they are for hiatal hernia in current documented reports. When one considers that in the surgical repair of hiatal hernias ample opportunity is afforded to perform a definitive operation, this very high incidence of persistence of symptoms is unacceptable. It is this high incidence of recurrence which deters the physician from surgical correction and has stimulated research in this area and reluctance in recommending operation.

Because of this dissatisfaction with medical and surgical treatment, adequate maneuvers must be employed which are essential in accurately diagnosing the source of substernal distress in patients with hiatal hernias.[5-8] As is well known, the incidence of hiatal hernias can range as high as 60 per cent in a normal population, and the coëxistence of this often benign disorder in the presence of substernal distress can lead to surgery which is unnecessary.[9]

For these reasons several steps are being reviewed in the current evaluation of gastroesophageal reflux and heartburn.

Methods and Materials

Twenty-five patients with symptoms of acid reflux were studied. Ten of these patients were from The Johns Hopkins Hospital and will be reviewed in a subsequent paper, and 15 were seen at the gastrointestinal clinics of the D. C. General Hospital. In addition, 25 control subjects were also studied.

Esophageal manometric data were recorded through 3 Sanborn transducers connected to a direct-writing Sanborn recorder. Esophageal catheters were composed of a train of 3 water-filled polyvinyl catheters with metal tips which could be visualized radiographically. Each opening was spaced 5 cm. apart, which enabled simultaneous recording throughout the entire esophagus. The catheters were placed into the stomach, through the nose, and gradually withdrawn at 1 cm. levels, where manometric data were recorded in the same fashion as previous studies (figure 1).[10-16]

Part of this study included simultaneous manometric recording and part involved the use of a 100 kv fluoroscope which can be currently found in many internists' offices. The barium swallows were photographed by an image intensifier on cinefilm at 30 feet per second directly from a TV monitor which numbered each frame and marked the manometric records of each 100 frames.

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* Assistant Clinical Professor of Medicine, George Washington University School of Medicine; Associate Director, Outpatient Departments, District of Columbia General Hospital; office: 1629 K Street, N.W., Washington, D. C. 20006.

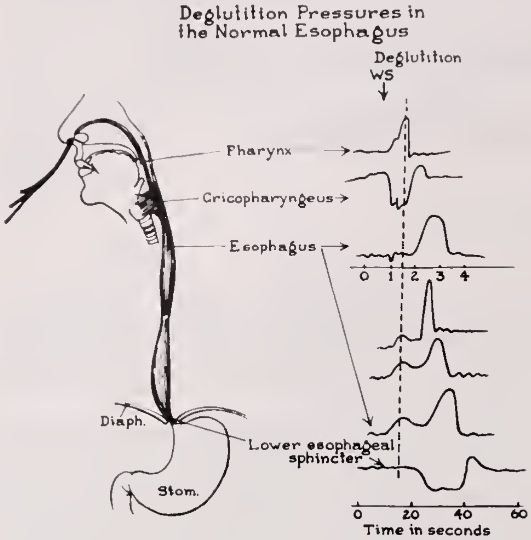

FIG. 1. Three polyvinyl catheters, which are water-filled, are introduced into the stomach through the nose and withdrawn at 1 cm. levels, which enables a complete esophageal pressure profile from the lower esophageal sphincter to the pharynx. Pressure in terms of mm. Hg are expressed on the vertical axis and time in seconds on the horizontal axis.

A Bernstein acid-perfusion test was utilized in each patient. This consisted of the perfusion of one-tenth normal hydrochloric acid through the proximal catheter tip into the lower esophagus at a rate of 90 drops per minute.[2, 17]

The protocol of this study involved first giving patients neutral barium followed by acid barium, and then followed by antacid. After a period of 15 minutes the acid barium swallows were repeated.

Seven patients were esophagoscoped and 2 patients were biopsied.

Results

In 10 patients with a negative Bernstein test who had no symptoms of gastroesophageal reflux or retrosternal distress there were no changes. Esophageal motility showed a normal lower esophageal sphincter, and the esophagus showed normal progressive peristalsis throughout. In addition, there was no change with acid or neutral barium (figure 2).

In the patients with symptoms of gastroesophageal reflux and retrosternal distress with a history of heartburn, striking changes were seen. Detailed

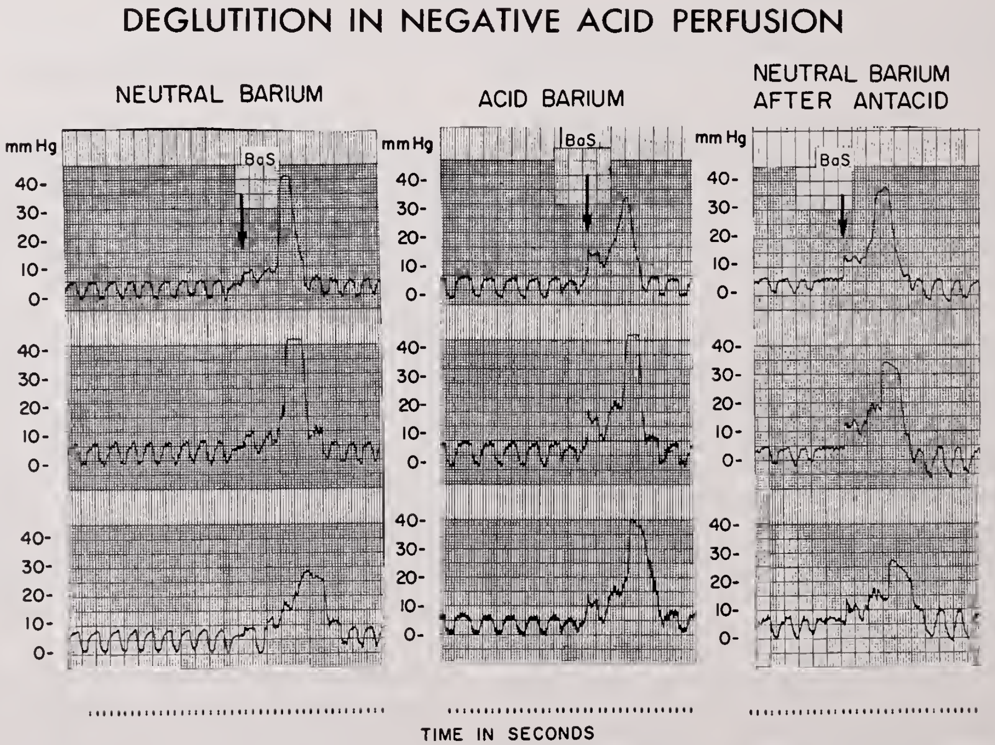

FIG. 2. Pressures in mm. Hg are expressed on the vertical axis and time in seconds on the horizontal axis. With neutral barium in an asymptomatic control patient a normal swallow was seen. With acid barium a normal swallow of normal amplitude and duration was also seen, and with neutral barium after antacid again a normal swallow was seen.

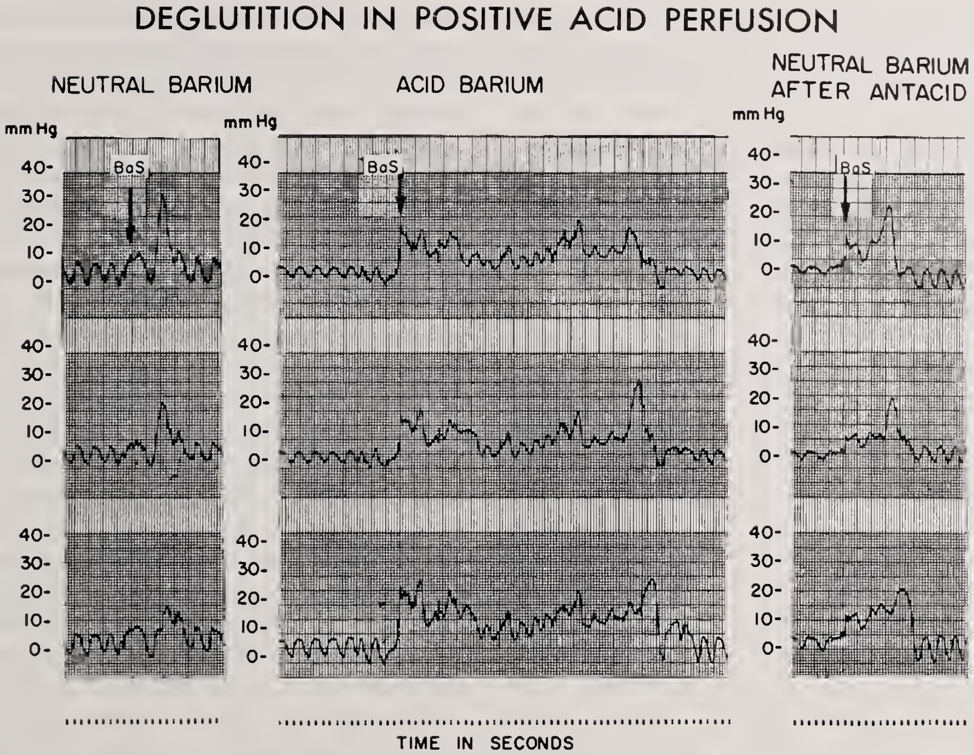
DEGLUTITION IN POSITIVE ACID PERFUSION
NEUTRAL BARIUM
ACID BARIUM
NEUTRAL BARIUM AFTER ANTACID
mm Hg
BaS
40-
30-
20-
10-
0-
TIME IN SECONDS

FIG. 3. When a symptomatic patient with a positive Bernstein test was given neutral barium he had a normal progressive peristaltic contraction of normal amplitude and normal duration. However, when acid barium was given he had abnormally prolonged swallowing with numerous spikes in the pressure between the initiation of the barium swallow and the final arrival of the peristaltic wave which cleared the esophagus. During this time reflux of the barium column was seen and the patient experienced symptoms of substernal distress. When neutral barium after antacids was given the patient's esophageal progressive peristaltic contractions returned to normal.

esophageal manometric studies will be described in a subsequent paper (figure 3).

Neutral barium showed no changes over those of the control subjects with negative acid-perfusion (Bernstein) tests. Normal progressive peristalsis was seen with each swallow of neutral barium. However, when acid barium was ingested, striking changes were found. The patients with gastroesophageal reflux and positive Bernstein tests given acid barium revealed the occurrence of simultaneous esophageal contractions which could be seen on the esophageal manometric tracings and simultaneously on the cinefilm. In addition, barium was seen to regurgitate upward into the esophagus toward the mouth. During this time the patient complained of the usual severe symptoms previously experienced of acid regurgitation, heartburn, and chest distress. Another unusual finding was marked increase in the interval time between the initiation of swallowing and the final arrival of the peristaltic wave in the lower esophagus.

Normal control patients showed an interval time of only 5 seconds, while patients with positive Bernstein tests and with substernal distress compatible with heartburn showed an interval time of between 20 and 35 seconds with acid barium (figure 4). This interval time was dramatically seen on the cinefilm, in which barium was seen to remain in the esophagus for a prolonged period of time and on X-ray 15 to 35 seconds after the swallowing. In the normal patient barium was seen to completely clear the esophagus and a normal progressive peristaltic contraction swept the esophagus clean of any residual barium.

Discussion

The evidence documenting the role of reflux in the genesis of heartburn has consisted of many related studies. These include studies with gastric intubation, X-rays, pH studies, and manometric observation.[1-4, 11-23] When one aspirates the contents of the lower esophagus in patients with gastroesophageal reflux the pH is low. In patients with heartburn it is generally demonstrated that this is a more sensitive technique for demonstration of reflux than is the usual routine fluoroscopic observation. Glass electrodes measuring pH in the lower esophagus were also used in this study, and a drop of the pH values to less than 4 were indicative of gastroesophageal reflux and correlated well with the onset of heartburn. Also, impairment of the normal barriers to gastroesophageal reflux in the lower esophageal sphincter is seen to increase the incidence of symptoms. Patients with hiatal hernias experiencing reflux symptoms generally have a lower pressure than those without such symptoms, which would suggest that the breakdown of lower esophageal sphincter integrity plays a significant role in the combination of the gastroesophageal reflux.[11, 15] Some of the most impressive evidence of the role of the lower esophageal sphincter in preventing gastroesophageal reflex is surgical, because mechanical alterations of this area impair the closing mechanism of this sphincter which permits free gastroesophageal reflux and can be seen to lead to severe inflammatory changes in the distal esophagus.[4, 9, 23]

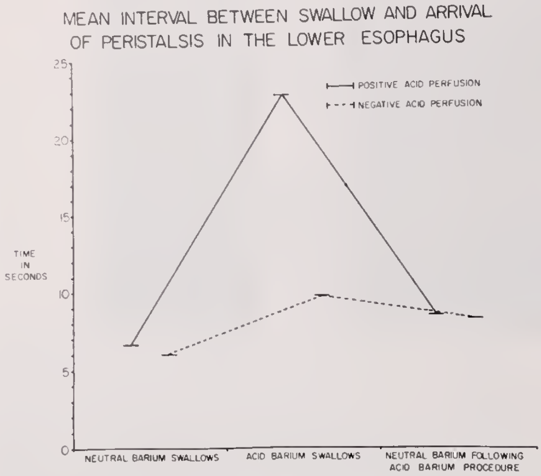

FIG. 4. Time in seconds is expressed on the vertical axis, and 3 columns showing neutral barium swallows, acid-barium swallows, and neutral barium following the acid-barium procedure are seen. The solid lines showing those patients with positive acid perfusions show a marked increase in the level between the swallow and the arrival of peristalsis in the lower esophagus during the acid-barium swallow, while the asymptomatic patients with negative acid-perfusion studies showed only a very slight rise. When neutral barium was given again following the acid-barium procedure these intervals returned to normal. It was during the long intervals between initiation of the swallow and the final arrival of the peristaltic wave which cleared the esophagus that these patients experienced most of their distress.

With the acid perfusion test there is excellent correlation between spontaneously occurring symptoms and those with perfusion of one-tenth normal hydrochloric acid.[2] It must be pointed out, however, that the exact etiology of the reflux mechanisms of the lower esophagus which are associated with symptoms of heartburn is not clearly delineated. Since it is thought that reflux hydrochloric acid from the stomach to the esophagus causes symptoms, this very convenient acid is used in the Bernstein test. However, it must be pointed out that the noxious effect of gastric juice need not be the entire responsibility of hydrochloric acid, since the distal esophagus is sensitive to other substances as well, and indeed the reflux of intestinal alkaline contents following total gastrectomy has also been associated with substernal distress and heartburn.

In addition, one is not clear about the association of hiatal hernia with reflux esophagitis because the presence of a hiatal hernia is not thought to be a necessary prerequisite of gastroesophageal reflux. In a series of patients with typical severe reflux symptoms only 11 of 25 showed a hiatal hernia demonstrated by X-rays.[2, 9, 22] Also, significant reflux has been shown to occur in the absence of hiatal hernia—in pregnancy, pyloric obstruction, and in patients seen in many gastroenterologists' offices with reflux symptoms in whom hiatal hernias cannot be demonstrated either radiologically or surgically.

This difficulty in properly evaluating not only the etiology of symptoms of heartburn but in arriving at some rational basis for the treatment of patients with symptoms of gastroesophageal reflux, of heartburn, and of hiatal hernia makes it extremely difficult to evaluate any individual problem.

Indeed, esophagoscopy is also no valid criterion for the presence of esophagitis, and in a well documented study 8 of 25 patients with severe heartburn have been shown to have no endoscopic or histologic evidence of inflammation.[2, 17] Similarly, 53 per cent of the patients studied by Bernstein with positive acid-perfusion studies had no endoscopic evidence of inflammation, while radiologic diagnoses showed "a severe esophagitis," and endoscopically one saw erythema in the distal esophagus. On the other hand, 8 asymptomatic patients who had no hiatal hernias and who had normal esophageal mucosa endoscopically, who had biopsies in the same study, showed chronic inflammation microscopically in 3. The point, therefore, can be made that heartburn also does not closely correlate with the presence of gross or histologic evidence of inflammation.

The problem is further compounded by the fact that pain may occur with esophageal spasm in the absence of inflammation and/or esophagitis and also in the absence of hiatal hernia. These patients are usually regarded as having functional gastrointestinal disease and psychosomatic disorders, but the severity of their symptoms is close to those with demonstrable inflammation.

In studies of patients with severe heartburn, however, several uniform features can be demonstrated. Intraluminal pressure recordings during acid-induced duplication of symptoms reveal several types of motor abnormalities. Included are simultaneous spastic contractions of increased amplitude and duration and rising intra-esophageal luminal pressure which is present during acid perfusion of the esophagus and not present during saline perfusion. It is thought that these changes, particularly the increased amplitude and duration of the peristaltic contractions and the rise in the base-line pressure, are reflections of changes of increased tone of the esophageal wall which can represent a plausible phenomenon for the mediation of the esophageal symptoms.

In an effort to accurately evaluate causes of chest pain in patients with these symptoms and to better evaluate medical therapy and surgery more accurate procedures and maneuvers localizing the patient's chest distress are needed. Of these, esophageal motility studies showing an impaired lower esophageal sphincter mechanism in the presence of normal peristalsis are valuable. Endoscopic diagnosis of inflammation of the esophagus as a cause of the pain has been generally unreliable. X-ray evidence of hiatal hernia is also unreliable because many hiatal hernias do not cause symptoms, and on the other hand many patients with severe heartburn may not show a hiatal hernia on routine upper gastrointestinal series.

The most uniformly used test today is the Bernstein acid-perfusion test, in which the esophagus is intubated and a perfusion of saline through the lower esophagus does not produce symptoms, while the perfusion of one-tenth normal hydrochloric acid causes marked substernal distress. When these are recorded with esophageal manometric techniques the rise in base line can be seen, along with the increased simultaenous contractions of the esophagus, at the same point in time at which the patient complains of pain. This appears to clinch the diagnosis of reflux esophagitis.

In the presence of abnormal peristalsis the patient's symptoms may not be due to esophagitis but may be entirely secondary to diffuse esophageal spasm, which has similar symptoms to that of reflux esophagitis. In the absence of this knowledge, patients may undergo unnecessary surgery for an innocent hiatal hernia.

In order to determine the cause of esophageal reflux and heartburn it was decided to combine the best part of the present diagnostic maneuvers into a simple procedure. For this reason barium was mixed with concentrated hydrochloric acid and an ingested bolus of this acidified barium was placed in the lower esophagus. The results suggest that the heartburn and chest pain which are attributable to esophageal changes are due to increased spastic contractions of the esophagus with regurgitation and reflux of the upper barium column, both upward and downward in the esophagus. In addition, the other striking finding was that the acid barium in these abnormal patients with heartburn caused a consistent delay in the interval between the initiation of swallowing and the final arrival of the peristaltic wave in the lower esophagus, which could be seen by manometric tracing and visualized by fluoroscopic techniques.

This simple technique of the ingestion of barium should be a useful clinical tool in the hands of physicians interested in evaluating patients with esophageal disorders and in preventing unnecessary surgery.

The importance of accurate diagnosis of gastroesophageal reflux prior to any surgical technique is essential to careful medical management. Therapy is based on the fact that diminished reflux decreases the noxious effect of reflux secretions and is a goal in therapy. To attain this objective successful antacid maneuvers consist of frequent antacid ingestion, and in severe cases an hourly schedule throughout the waking hours with 1 to 2 doses at night may bring relief when a less intensive medical regimen has failed. Local anesthetics have no place in the treatment of heartburn as demonstrated in a previous study.[11] In addition to intensive antacid therapy the avoidance of prolonged recumbent posture, the avoidance of constricting abdominal garments, the elevation of the head of the bed at night, small meal size, and the omission of food several hours prior to sleep constitute an adequate regimen for most patients.

Anticholinergics are not advised in these patients because they have been shown to slow gastric emptying, which can increase reflux over a longer period of time from the stomach into the esophagus. Anticholinergics also depress esophageal peristalsis. Indeed, they have been shown to depress esophageal secondary peristalsis, which can inhibit the mechanism by which refluxed gastric material is adequately evacuated from the esophagus during sleep. Also, anticholinergics decrease the resting tone of the lower esophageal sphincter and may therefore exacerbate the mechanisms which impair the normal barriers to gastroesophageal reflux.

It has also been shown that the correlation between pH studies used alone and symptomatic results are not good, and although anatomic reduction of the hernia may be confirmed by visualization of surgically placed clips at the gastroesophageal junction, this does not necessarily verify the competency of the esophagogastric mechanism. Reflux esophagitis may also occur in the absence of a demonstrable hiatal hernia. Although pH studies are useful, persistence of symptoms after surgery, even without gross recurrence of hernia by the standard methods of evaluation, occurs.

It is therefore important to adequately evaluate the source of chest pain and substernal distress in patients with coincident hiatal hernia in order to avoid poor results postoperatively. Esophageal motor studies should be performed in each patient to evaluate adequately the lower esophageal sphincter action, since it has been shown that the surgery is most successful when this is known. Tobias and Morgan have shown that operative results are improved when the integrity of the lower esophageal sphincter is accurately evaluated presurgically.[24] Intra-abdominal replacement and anchorage of the gastroesophageal junction may correct the anatomy in hiatal hernia, but in the presence of a destroyed or incompetent lower esophageal sphincter the results may be poor. These sphincter studies may also be valuable because it may be necessary to employ vagotomy when the terminal esophageal sphincter is destroyed, as well as when there is a concomitant duodenal ulcer.

Results of 50 operations for hiatal hernia after lower esophageal sphincter evaluations by esophageal manometric criteria indicated that there have been no recurrent herniations over a 2½-year period, and that the postoperative tendency to reflux was corrected in 96 per cent of patients.

The standard techniques of X-ray examination and fluoroscopy may show that the hiatal hernia repair is anatomically correct with placement of the esophagogastric junction beneath the diaphragm and restoration of the normal mechanism to prevent gastric reflux into the esophagus. However, the evaluation of postoperative symptomatic results with esophageal manometric techniques may be necessary for an adequate assessment of the repair, because decreased recurrence of gastroesophageal reflux is a better measurement of selection of patients than anatomic criteria.

Esophageal motility and acid-barium studies are offered as a more accurate determination of the origin of chest pain and substernal distress, symptoms of heartburn, and gastroesophageal reflux in patients with or without hiatal hernia and as an essential part of every patient's pre- and postsurgical evaluation.

Summary

Accurate evaluation of gastroesophageal reflux and esophageal abnormalities and symptoms of heartburn is essential to a better understanding of the individual patient and is necessary for adequate appraisal of medical treatment. It is also essential to determine whether surgery should be done. Acid-barium and esophageal manometric studies have been shown to be of value in determining the etiology of substernal distress. In many instances the patients with peptic symptoms have an innocent coincidental hiatal hernia, and it is in these instances that unnecessary surgery may be performed. These studies may be used as an integral part of the work-up in order that one may document the etiology of peptic symptoms in their association with a hiatal hernia.

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Congenital Segmental Lobar Emphysema

Report of Two Cases and Review of the Literature

COMMANDER N. A. JANOVSKI, MC, USNR,* LIEUTENANT (J.G.) JOHN A. BALACKI, MC, USNR,†
AND LIEUTENANT FRANCIS D. KEENAN, MC, USN†

CONGENITAL LOBAR EMPHYSEMA is a disease entity which is recently being recognized at an increasing rate. The natural course of this disease in symptomatic infants is associated with a high percentage of mortality without surgical intervention. A correct diagnosis is, therefore, mandatory.

The first reported case of congenital lobar emphysema was described by Myer as early as 1858, as quoted by Jones et al.[1] Nelson,[2] in 1932, described the clinical course of a patient with congenital lobar emphysema of the left upper lobe. Lobectomy as the curative mode of treatment in a child with infantile lobar emphysema was first performed and described by Leahy and Butsch[3] in 1949.

This presentation deals with 2 cases of congenital segmental lobar emphysema which conform by and large to clinical findings of other cases presented in earlier literature.

Review of the Literature

Review of the literature to date reveals 123 cases of congenital lobar emphysema, summarized in table 1.

TABLE 1: Statistics of 123 Cases of Congenital Lobar Emphysema in the Literature[1-40]

Age at Onset of Symptoms (*months*)	All Cases				Involved Lobes									
	Total		Male	Female	Total		LUL		RML		RUL		Two Lobes	
	No.	Per cent	No.	No.	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Less than 1 week	49	40	23	6	42	37	19	39	14	39	4	17	5	83
One week to 1 month	19	15	12	5	18	16	4	8	6	17	7	30	1	17
One month to 2 months	20	16	5	6	19	17	9	18	6	17	4	17	—	—
Two months to 3 months	8	7	3	—	8	7	3	6	3	8	2	9	—	—
Three months to 4 months	9	7	1	1	9	8	6	12	2	6	1	4	—	—
Four months to 5 months	7	6	2	1	7	6	1	2	5	14	1	4	—	—
Five months to 1 year	6	5	3	1	6	5	2	4	—	—	4	17	—	—
More than 1 year	5	4	—	1	5	4	5	10	—	—	—	—	—	—
	123*	100	49	21	114†	100	49	100	36	100	23	100	6	100
PER CENT OF TOTAL			(70%)	(30%)	(100%)		(43%)		(32%)		(20%)		(5%)	

* Includes cases for which tabulated material was not available.

† Excludes 9 cases in which emphysema was generalized, bilaterally or unilaterally, or occurred in a lower lobe.

There was insufficient material with regard to race of patients to be of any statistical value.

Of the 123 total number of patients, 103 underwent lobectomy with a mortality rate of 7 per cent (7 patients). Of those patients with lobectomy, the surviving 93 per cent (96 patients) eventually achieved complete recovery, although 4 patients suffered immediate postoperative complications. Twenty patients of the total 123 received treatment other than lobectomy, such as thoracentesis or conservative therapy, and of these the mortality rate was 75 per cent (15 patients).

Pathogenetic evaluation of the total 123 cases revealed 68 cases (55 per cent) in which no lung lesion, other than emphysema, could be demonstrated either grossly or histologically. In 14 per cent (17 cases) there were structural defects in the involved lobes; among examples of structural defects were anomalous vasculature, ectopic lymphoid tissue, and hyperplasia of connective tissue with secondary bronchial constriction. Cartilaginous defects, either complete absence or significant hypoplasia, was observed in 14 per cent (17 cases).

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* Professor of Pathology, Creighton University School of Medicine, Omaha, Nebr. 68108; recently Chief of Anatomic Pathology, United States Naval Medical School, National Naval Medical Center, Bethesda, Md.

† Department of Thoracic Surgery, United States Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

Cardiovascular deformity, primarily either patent ductus arteriosus or interventricular septal defect, was present in 15 per cent, or 19 of the total cases. Signs and symptoms most often encountered in those patients with cardiovascular abnormalities were severe dyspnea, tachypnea, contralateral mediastinal shift, and atelectasis of adjacent, nonemphysematous lobes. In general, the clinical picture in such cases was more exaggerated as compared with cases in which there was no cardiovascular involvement.

Other congenital anomalies such as supernumerary digit, aplasia of a kidney, cleft palate, or absent mediastinum were found in only 5 of the 123 cases.

Of the 48 cases represented with more complete histories, the most common symptom was dyspnea, which was present in 29 of the patients (60 per cent), while the most common X-ray finding was atelectasis of adjacent, nonemphysematous lobes which was present in 26 patients (54 per cent). Cyanosis was also a significant clinical finding in that it was present at some time in the history of 14 of the patients (29 per cent).

We have attempted to group signs and symptoms in triads in order to determine the possibility of definite syndromes in congenital segmental lobar emphysema. In many instances, other signs and symptoms in addition to those in the proposed triad were present in individual patients.

Dyspnea, cyanosis, and atelectasis of adjacent nonemphysematous lobes, as a syndrome, were present in 21 of the patients (44 per cent); 37 (77 per cent) of the patients expressed a combination of any 2 of the elements of this triad. Eighteen patients (38 per cent) had any 2 or all 3 elements of the triad which consisted of herniation of an involved lobe through the anterior portion of the mediastinum, contralateral mediastinal shift, and displaced heart sounds.

The triad of tachypnea, wheezing or grunting on expiration, and cough was found in whole or in part in 17 (35 per cent) of the patients.

Sixteen (33 per cent) of the patients had any 2 or all of the elements in the syndrome of decreased breath sounds and hyperresonance over the involved lobe and sternocostal retraction on inspiration.

Only 5 (10 per cent) of the patients had gastrointestinal difficulties as represented by vomiting, decreased weight gain, and fatigue, or difficulty with feeding.

There was no apparent significant relationship between recently acquired respiratory infections and preëxisting involvement of any particular lobe by congenital emphysema.

Of these same 48 cases, complicated prenatal courses were found in only 3. There was 1 difficult labor, and delivery was complicated in 10 per cent, or 5 of the 48 cases. Ten per cent (5) of the 48 cases showed evidence in their families of hereditary or congenital disorders. Asthma, seasonal dermatitis, polycystic kidneys, and hay fever were examples of familial findings in these patients.

In addition to the previously tabulated and analyzed cases, 14 cases were reported by Jones et al[1] in 1965, the findings of which correlate well with our review of the literature. Of 14 patients with congenital lobar emphysema, 8 had congenital heart disease. In this series 12 patients recovered following lobectomy, while 2 patients died after surgery as a result of complications of congenital heart disease.

The longest follow-up on post-lobectomized patients was reported in the series of DeMuth and Sloan.[11] Pulmonary function tests performed on the 5 cases in this series indicated that there was a compensatory pattern of pulmonary overdistention with increased residual volume; there was no change of vital or diffusing capacity of the remaining lung tissue.

Follow-up was available for 20 of our total 123 cases and ranged in time from 4 months to 15 years. With the exception of 1 patient who had suffered from repeated and debilitating respiratory infections, all were alive and well; 2 patients did, however, complain of tiring before their friends with the same amount of exercise. The remaining 17 patients had neither physical limitations nor physical deformity.

An extensive review of the literature by Murray[41] provides information as to natural history, clinical features, and possible etiology of congenital lobar emphysema as well as a vast bibliography (192 references).

Report of Cases

Case 1. B. S., a 13-week-old Caucasian female, was admitted to the U. S. Naval Hospital, Bethesda, Maryland on December 7, 1967 because of abnormal findings on a chest X-ray film at a local dispensary. She was reported to be completely asymptomatic with the exception of occasional coughing while eating. She was the product of a spontaneous vaginal delivery to a 32-year-old gravida II female after 41 weeks' gestation and 3 hours' labor. Birth weight was 8 pounds, 5 ounces with an Apgar rating of 10. Discharge was on the fourth postpartum day, and physical examination was reported to be normal. There were no feeding problems, and growth and development appeared to be normal when the child was examined at 6 and 10 weeks of age. The cardiac impulse was at the right sternal border and heart sounds were greater on the right side. The first chest X-ray film was made at 12 weeks of age when the patient was referred to this hospital.

A maternal grandmother and a maternal uncle had polycystic kidneys. The mother had mild hypertension, and a renal scan was found to be compatible with polycystic kidneys.

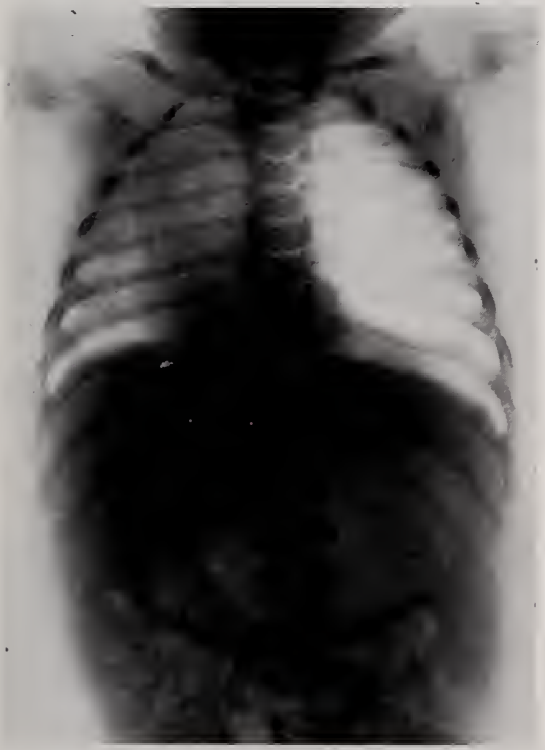

FIG. 1. Initial X-ray film in case 1.

On admission the patient was a well-nourished, well-developed, 13-week-old infant, weighing 12 pounds, 4 ounces. Two small hemangiomas were present on the left shoulder and left flank. There was no cardiac murmur, and the right heart border was percussed at the right mid-clavicular line. There were tubular breath sounds and increased resonance over the left upper lung field. The rest of the physical examination was normal.

The hemoglobin was 9.4 Gm.; the hematocrit was 28 per cent; the white blood cell count was 8,100 with 27 per cent neutrophils, 65 per cent lymphocytes, 4 per cent eosinophils, and 4 per cent monocytes. The blood urea nitrogen was 9 mg. Urinalysis was normal. Chest X-ray films showed emphysema of the left upper lobe and atelectasis of the right upper lobe (figure 1). A lung scan with RISA® showed no perfusion of the left upper lobe (figure 2). A renal scan was normal.

FIG. 2. Lung scan, posterior view, with RISA, showing no perfusion of left upper lobe (case 1).

The patient was transfused with 75 ml. of whole blood in preparation for surgery. On December 12, 1967 a left upper lobectomy was performed through a posterolateral incision. The postoperative course was complicated by a persistent air space requiring reinsertion of a chest tube twice. The tube was removed on December 28, and the baby was discharged on December 31, 1967. Chest X-ray films prior to discharge showed good expansion of the remaining left lung. The patient has been doing well and shows normal growth and development on periodic outpatient examinations.

Case 2. T. L., a 9-week-old Caucasian female, was readmitted to the U. S. Naval Hospital, Bethesda, Maryland on May 28, 1968 with a history of tachypnea and abnormal chest X-ray films. She was born at this hospital to a 26-year-old gravida III healthy female by a low forceps delivery after 43 weeks' gestation and 11 hours of first stage labor. Birth weight was 7 pounds, 5½ ounces and the Apgar rating was 8 because of only a "fair" cry. Physical examination at discharge on the fourth postpartum day was reported to be normal. There were no feeding problems, but the mother noted frequent episodes of rapid breathing without respiratory distress or cyanosis. The infant was seen for a 6-week check on May 14, 1968 and was found to have tachypnea of 80–90/min., fever of 104°F, and a chest X-ray film which was interpreted as showing right lower lobe atelectasis or infiltrate. She was admitted for 8 days and showed improvement in an O_2 mist tent and on intramuscular penicillin. After discharge the chest X-ray films were reviewed, and the herniation of the right upper lobe across the midline was noted (figure 3). The infant was readmitted on May 28, 1968 for further evaluation and was afebrile and asymptomatic, with the exception of occasional tachypnea. The family history was unremarkable.

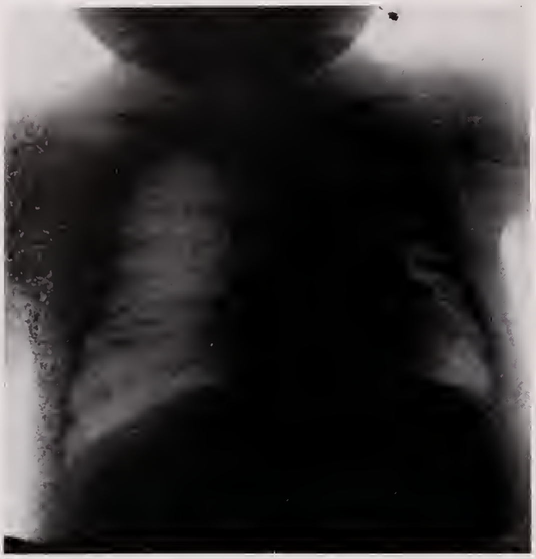

FIG. 3. Initial X-ray film in case 2.

Physical examination revealed a well-nourished, well-developed, 9-week-old female infant, weighing 11 pounds, 15 ounces, with a resting respiratory rate of 36/min. and a pulse rate of 160. No respiratory distress or cyanosis was seen while she was crying. There was no cardiac murmur, and a mediastinal shift could not be appreciated. Respiratory chest movement was symmetrical, and percussion was normal. There were slightly decreased breath sounds in both upper lung fields. The rest of the physical examination was normal.

The hemoglobin was 11.8 Gm.; the hematocrit was 37 per cent; the white blood cell count was 15,200 with 17 per cent neutrophils, 80 per cent lymphocytes, 2 per cent eosinophils, and 1 per cent monocytes. Urinalysis was normal. Chest X-ray films showed emphysema of the right upper lobe with herniation across the midline and atelectasis of the right lower lobe (figure 3). A lung scan with RISA showed decreased perfusion of the right upper lobe (figure 4).

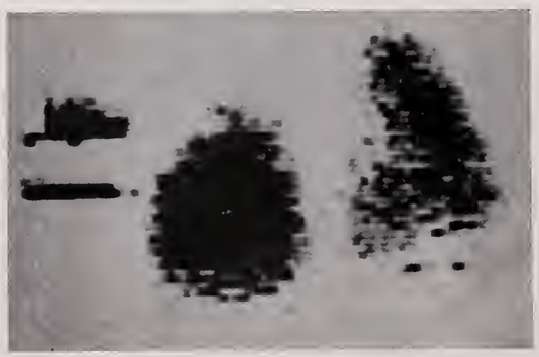

FIG. 4. Lung scan, anterior view, with RISA, showing decreased perfusion of right upper lobe (case 2).

On June 5, 1968 a right upper lobectomy was performed through a posterolateral incision. Postoperatively there were no complications, and the patient was given 75 ml. of whole blood. Chest tubes were removed by June 8, and the patient was discharged on June 15, 1968.

Subsequent examinations in the outpatient clinic have shown normal growth and development in a healthy infant (figure 5).

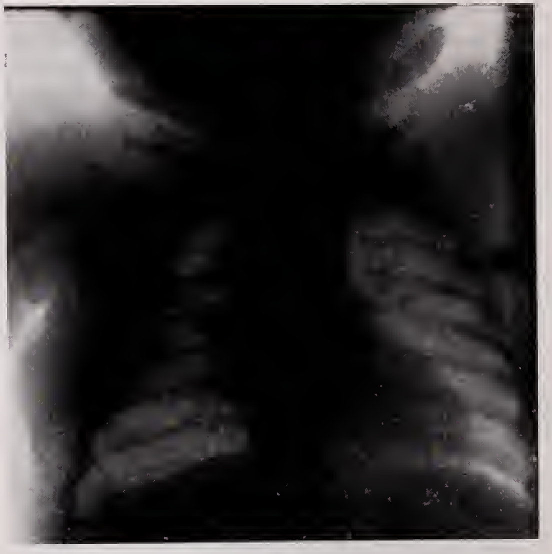

FIG. 5. Postoperative view of chest in case 2.

Gross and microscopic examination. The left upper lobe in case 1 measured 10 by 12 by 2 cm. The lung tissue was subcrepitant and spongy (figure 6). On histologic examination the striking feature was peribronchial and perivascular fibrosis associated with marked expansion and dilatation of individual bronchioli and alveoli (figure 7). Another striking observation was considerable decrease of bronchial hyaline cartilage; only in the

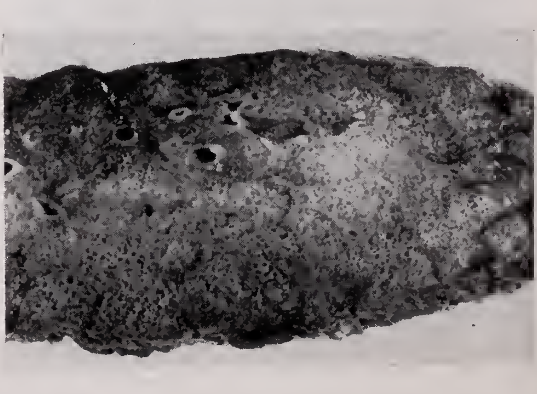

FIG. 6. Spongy appearance of lung in case 1.

main bronchi of the left upper lobe were moderately developed segments of cartilage encountered (figure 8). Interstitial fibrosis was encountered within the interalveolar septa (figure 9) and was pronounced along the branches of the pulmonary arteries (figure 10).

The gross pathologic alterations in the right upper lobe obtained in case 2 consisted of extremely expanded lung tissue, measuring 11 by 5 by 1 cm. The lung tissue was noncrepitant and did not collapse with palpation, having the consistency of a pillow (figures 11 and 12).

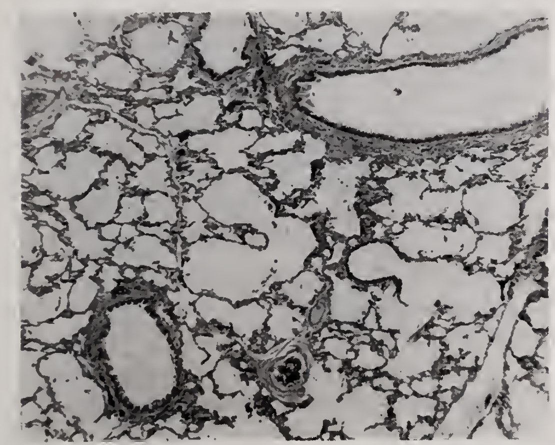

FIG. 7. Dilatation and expansion of bronchioli and alveoli associated with peribronchial fibrosis in case 1.

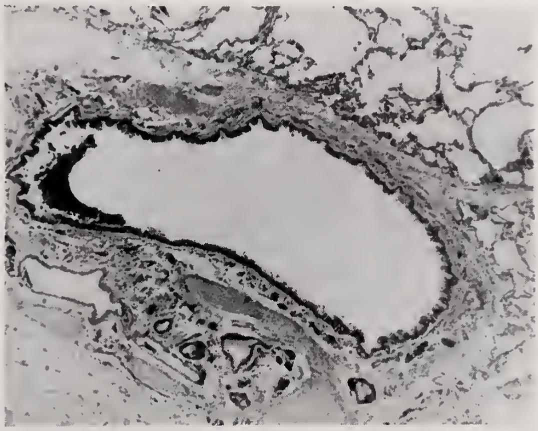

FIG. 8. Considerable decrease of bronchial cartilage in one of main bronchial branches in case 1.

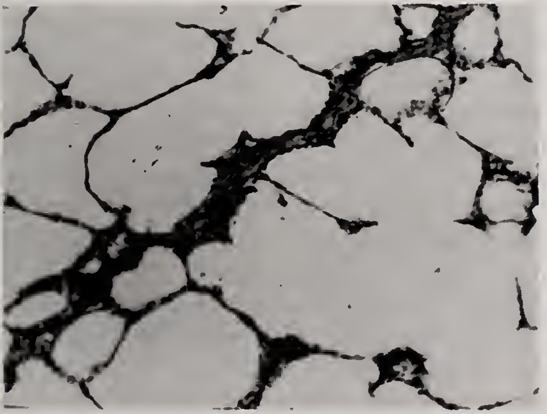

FIG. 9. Considerable interstitial fibrosis in case 1.

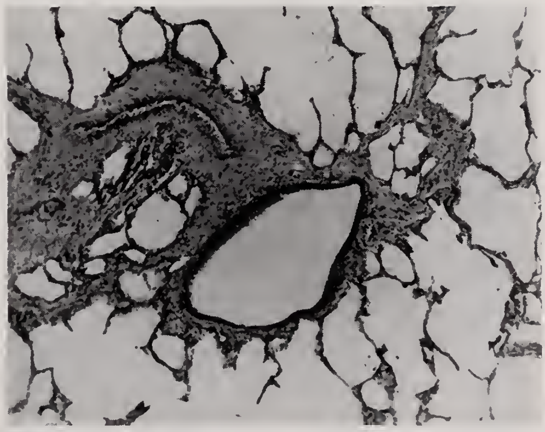

FIG. 10. Pronounced perivascular fibrosis in case 1.

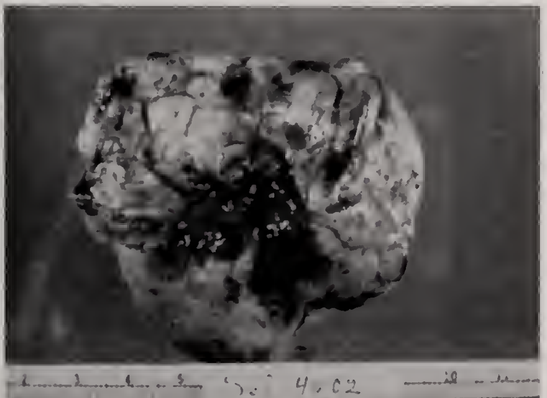

FIG. 11. Extremely expanded right upper lobe obtained from case 2.

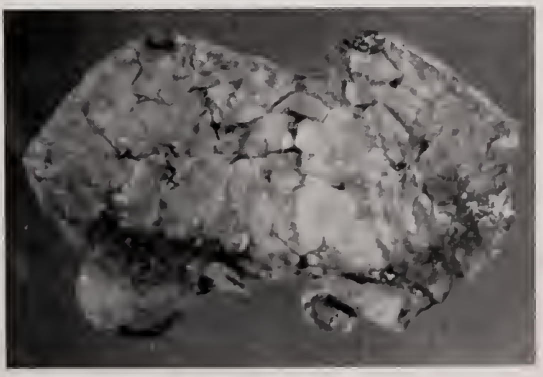

FIG. 12. Bisected right upper lobe. The tissue is noncrepitant and noncollapsible (case 2).

The histologic examination of this same tissue showed marked distention of the terminal bronchioli and alveoli and agenesis of the bronchial cartilage (figure 13). There was moderate perivascular, peribronchial and peribronchiolar fibrosis, but the degree of fibrosis was considerably less than that encountered in case 1 (figure 14). The elastica stain preparation of the lung tissue showed definite decrease of elastic fibers in the intervening septa of the alveoli. This was also associated with absence of septal fibrosis (figure 15).

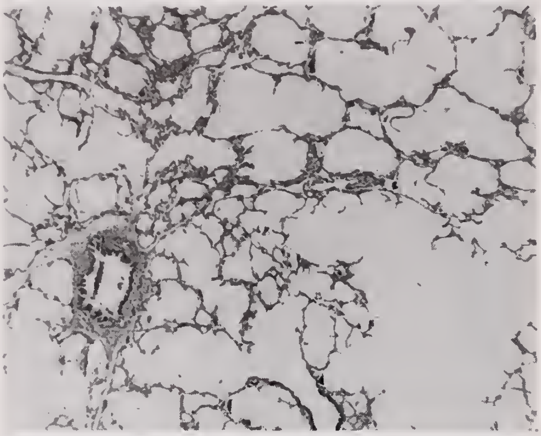

FIG. 13. Marked distention of terminal bronchioli and alveoli (case 2). There is agenesis of bronchial cartilage.

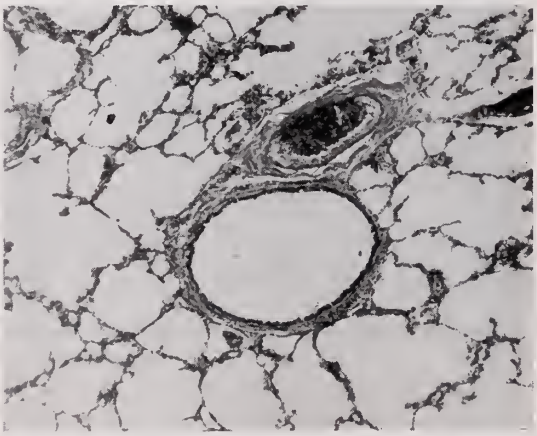

FIG. 14. Moderate peribronchial and perivascular fibrosis (case 2).

Discussion

In the 2 cases presented the clinical course and the roentgenologic picture show considerable similarity. The histologic examination, however, showed some morphologic alterations of distinct nature. In case 1 the morphologic changes were characterized by distinct interstitial perivascular and peribronchial fibrosis. The degree of cartilage development in the bronchial tree was considerably diminished, although the main bronchi showed a moderate degree of cartilage development. One can postulate that there must be an interrelationship between hypoplasia of the bronchial cartilage and the considerable interstitial fibrosis.

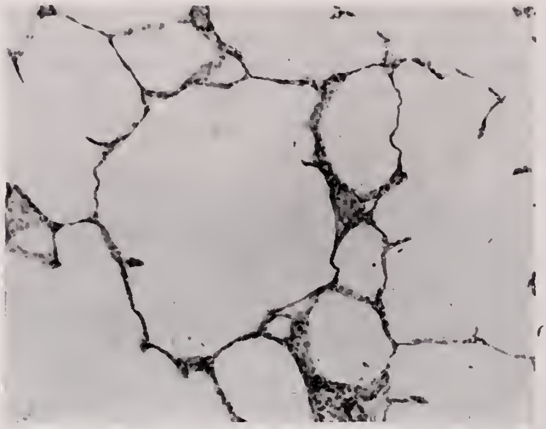

FIG. 15. Extreme degree of alveolar dilatation with decrease in elastic fibers and absence of septal fibrosis in case 2.

In case 2 there was complete agenesis of the bronchial cartilage, resulting in extreme alveolar distention. This distention was also associated with a decrease in elastic fibers of the alveolar walls and an apparent inability of the pulmonary tissue to respond with interstitial fibrosis.

In neither of the cases was there any degree of inflammatory response encountered. Basically, then, we are dealing here with examples of congenital lobar emphysema, conditioned by hypoplasia of bronchial cartilage, as seen in case 1, and agenesis of bronchial cartilage, as seen in case 2. The mechanism and underlying factors leading to hypoplasia and agenesis of the bronchial cartilage remain obscure, but certainly the alveolar tissue reacts very specifically to the diminished presence or complete absence of bronchial cartilage. It appears that in both cases pulmonary circulation was markedly impaired, in case 1 due to considerable perivascular fibrosis and in case 2 to enormous stretching of the pulmonary capillary bed to the point of collapse.

In the majority of the cases reported in the literature the congenital emphysema was apparently idiopathic. In our 2 cases definite cartilaginous defect was encountered as a direct cause of congenital segmental lobar emphysema.

Summary

A review of literature dealing with congenital lobar emphysema over the last 35 years has been presented. The majority of the cases seem to be

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Role of the Intra-atrial Electrogram in the Clinical Interpretation of Arrhythmias*

JOHN W. LISTER, M.D.†

IRREGULARITIES OF THE CARDIAC RHYTHM are a common phenomenon in patients with heart disease. The prompt treatment of an arrhythmia is facilitated by the exact diagnosis of the abnormal rhythm. The key to diagnosis is the determination of the temporal relationship between atrial and ventricular activation.

During many tachycardias atrial activity (P waves) frequently cannot be seen on the standard lead surface electrocardiogram; consequently, it may be difficult or impossible to determine the origin of a tachycardia, i.e., sinus, atrial, A-V nodal or ventricular. Recording of the right intra-atrial electrogram clearly defines the atrial rhythm and the temporal relationship of atrial to ventricular activation.

An electrode wire or a standard bipolar electrode catheter, with electrodes 1 cm. apart, can readily be passed into the right atrium via a needle puncture of the femoral vein or surgically exposed antecubital vein. From an electrode wire a unipolar intra-atrial electrogram can be obtained, and from a bipolar catheter a unipolar and bipolar intra-atrial electrogram can be recorded.

The unipolar intra-atrial electrogram is obtained by connecting an intra-atrial electrode to the V lead of the electrocardiograph. This records the entire electrical sequence of P wave and QRS complex and magnifies the size of the P wave. The bipolar intra-atrial electrogram is obtained by connecting one intra-atrial electrode to the right arm lead and the other intra-atrial electrode to the left arm lead of the electrocardiograph, and recording on lead I. The bipolar electrogram primarily records the time of arrival of the atrial impulse in the area of the electrodes and accurately delineates the timing of the P wave in the cardiac cycle. In the bipolar electrogram the ventricular component (QRS complex) is usually a minor component or not present on the tracing. When the QRS complex and P wave are simultaneous, the time of atrial activation is clearly depicted by the bipolar intra-atrial electrogram. In most instances atrial activity can be clearly delineated by the unipolar electrogram. However, not infrequently the P waves are buried in the QRS complex or T waves, and the unipolar intra-atrial electrogram does not permit a clear definition of the rhythm. In these cases, recording of the atrial rhythm by the use of the bipolar electrogram clarifies the rhythm.

In our experience the recording of unipolar and bipolar intra-atrial electrograms has been an important aid in the diagnosis of arrhythmias. In cases of atrial flutter and tachycardia the ventricular rate is easily determined from the standard electrocardiogram, but frequently the atrial rate cannot be ascertained. The intra-atrial electrograms clearly show the atrial rate. Thus, the degree of block at the atrioventricular node can be determined. Knowledge of the degree of A-V junctional block is often helpful in deciding upon the mode of treatment of an arrhythmia.

We have had a number of cases in which repeated electrocardiograms have been interpreted as sinus tachycardia with first degree atrioventricular block, but which, upon the recording of intra-atrial electrograms, were shown to be atrial tachycardia with 2:1 A-V block. In one such case the electrocardiogram was interpreted as sinus tachycardia with first degree heart-block and incomplete right bundle-branch block. There was an R′ in the QRS complex in leads V_1 and V_2. The unipolar electrogram did not clarify the rhythm, but the bipolar electrogram clearly showed atrial tachycardia with 2:1 A-V block, and the R′ in leads V_1 and V_2 was not due to an intraventricular conduction defect but a P wave superimposed on the end of the QRS complex.

The recordings of intra-atrial electrograms have clarified the rhythm in 5 cases of tachycardias with irregularly irregular ventricular rates, which did not slow after the administration of relatively large doses of digitalis. In 3 the arrhythmias had been interpreted as atrial fibrillation with a rapid ventricular response from standard lead electrocardiograms. In 1 case atrial fibrillation with a rapid ventricular response was present; in 2 cases atrial tachycardia with variable A-V block was present; and in 2 cases a wandering atrial pacemaker with an irregular atrial rate and varying A-V conduction was present. The clarification of these arrhythmias facilitated their treatment.

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† Chief, Section of Electrophysiology, Division of Cardiology, Department of Internal Medicine, Mount Sinai Hospital of Greater Miami, Miami Beach, Fla. 33140.

In 2 cases of tachycardia the ECG showed a regular rate and aberrant ventricular activation. The first heart sound was of constant intensity. From these findings it could not be clearly established whether these were supraventricular or ventricular tachycardias. The intra-atrial electrograms revealed ventricular tachycardia with atrial fibrillation in 1 case and ventricular tachycardia with atrial standstill in the other. The diagnosis of the arrhythmias facilitated their prompt treatment. These cases also demonstrated that the constant intensity of the first heart sound does not rule out ventricular tachycardia.

In A-V nodal rhythms and in certain instances of A-V dissociation, atrial activity may be obscured by the QRS complex. The recording of intra-atrial electrograms will clarify these rhythms. In A-V junctional rhythms there may be A-V dissociation, retrograde activation of the atria, or retrograde A-V block. In A-V dissociation there is a beat-to-beat change in the temporal relationship between atrial and ventricular activation because the atria and ventricles are beating independently of each other. When retrograde atrial activation is present there is usually a fixed temporal relationship between ventricular and atrial depolarization. In cases of A-V junctional rhythms with retrograde A-V block the atria are either beating more slowly than the ventricles or atrial standstill is present. The specialized conduction system of the heart is a 2-way conducting system. Therefore, in the presence of A-V dissociation, when the atria are beating at a significantly greater rate than the ventricles, antegrade A-V block is present. When the atria and ventricles are beating independently of each other at about the same rates (isorhythmic A-V dissociation), a functional rather than a pathologic block is usually present at the A-V node. When the ventricles are beating at a faster rate than the atria retrograde A-V block is present.

In complex arrhythmias the recording of unipolar and bipolar intra-atrial electrograms always depicts the temporal relationship between atrial and ventricular activation. The delineation of the time relationship of atrial to ventricular depolarization is an important aid in the diagnosis of the arrhythmia and its treatment.

Balloon-pumping in Cardiogenic Shock—Yahr et al

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New Techniques for Diagnosis of Hiatal Hernia—Hookman

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The Value of Esophagogastric Endoscopy*

BERNARD A. HECKMAN, M.D.†

Recent advances in the technology of fiberoptics have been fruitful in providing the gastroenterologist with a variety of flexible endoscopic instruments which allow accurate investigation of the upper gastrointestinal tract.[1] Flexible instruments allow the examination to be performed with a minimum of sedation, with very low morbidity, and with a minimum of discomfort to the patient. In experienced hands, well over 85 per cent of the mucosa of the stomach may be visualized in most patients including the fundus and the immediate prepyloric area. Recent modifications also allow intra-esophageal and intragastric photography to be accomplished with ease as well as biopsy of the esophageal and gastric mucosa when indicated.

There are relatively few contraindications to flexible endoscopy at the present time. The absolute contraindication is total inability of the patient to coöperate. This is a rare problem when the procedure is adequately explained to the patient. At the New York Hospital, in a period of 18 months, over 250 procedures were accomplished, and in less than 3 instances did poor patient coöperation require termination of the procedure. Extensive arthritis of the cervical spine presents a relative contraindication to endoscopy, although this is far less of a problem with flexible fiberoptic instruments which can be passed with the neck in flexion. Lesions in the upper one-fifth of the esophagus are better investigated with rigid instruments which allow constant visualization as the instrument is introduced. Esophageal varices are not a contraindication to examination, and indeed esophagoscopy is a valuable technique for their demonstration. Gastroscopy can generally be performed in all coöperative patients except those in whom there is obstruction in the esophagus or at the gastric inlet. Frequently visualization and biopsy of the site of obstruction with the esophagoscope will provide the needed diagnostic information in this instance. Impending perforation of a gastric ulcer does not preclude gastroscopy provided the endoscopist is aware of the situation and uses a minimum of air for insufflation during the procedure.

Esophagoscopy has proven to be an extremely useful technique for the further evaluation of lesions of the esophagus demonstrated by previous roentgenographic examination. The differentiation of benign from malignant strictures of the esophagus can often be made endoscopically. Intramural and mucosal lesions of the esophageal wall can often be visualized and appropriate biopsies obtained. The evaluation of achalasia should include endoscopic visualization of the distal esophagus to exclude the possibility of neoplastic disease of the distal esophagus or stomach simulating achalasia.[2] The roentgenographic demonstration of esophageal varices is successful in only 60 per cent of cases. Esophagoscopy is an accurate method of detection of esophageal varices.

Esophagoscopy and biopsy of the esophageal mucosa under direct vision have been extremely helpful in the diagnosis of peptic esophagitis. This lesion results from gastroesophageal reflux with or without a hiatus hernia or more rarely as a result of ectopic gastric mucosa lining a portion of the esophagus. Reflux of gastric acid into the esophagus may occur in some individuals in the absence of a demonstrable hiatus hernia. This has clearly been shown both by radiographic techniques and by direct measurements of esophageal pH in vivo.

A hiatus hernia may be easily demonstrated in an individual with gastric acid present but no evidence of either gastroesophageal reflux or of esophagitis. Thus, it is clear that one cannot equate the diagnosis of hiatus hernia with esophagitis. The radiographic diagnosis of esophagitis may be difficult until the advanced stages when esophageal ulceration and fibrotic strictures with obstruction are present. Direct visualization of the esophageal mucosa and esophageal biopsy have allowed an early and definitive diagnosis of esophagitis to be made. The technique is valuable in determining the extent of involvement, in assessing the success or failure of medical therapy, and in choosing those patients in whom surgery is indicated.

Gastroscopy has proved to be not only an important adjunct in the evaluation of known abnormalities of the stomach but also has contributed significantly to the detection of abnormalities not diagnosed at the time of radiographic examination of the stomach. Hypertrophic and atrophic gastritis,[3] superficial mucosal erosions, gastric varices,[4] shallow gastric ulcers, early lesions of gastric cancer, erosive gastritis, and gastric telangiectasia[5] are examples of some of the lesions which may be immediately apparent to the endoscopist and virtually impossible to detect accurately by conventional radiographic methods. The area of the cardia and fundus, a difficult area to examine radiographically, can now be visualized directly and photographed endoscopically. Postoperatively the stomach presents a number of special diagnostic problems. Fiberoptic flexible instruments with controllable tips now allow not only visualization of the gastric pouch and stoma but also permit visualization of the afferent and efferent loops for the detection of marginal ulceration, a lesion notoriously difficult to demonstrate radiographically.

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* From the Department of Gastroenterology, Washington Hospital Center, Washington, D.C.

† Address: 8107 Eastern Avenue, Silver Spring, Md. 20910.

An attempt at endoscopic visualization of gastric ulcers should be made in conjunction with other methods for excluding malignant lesions. Frequently a single observation will allow the experienced endoscopist to state with a high degree of accuracy the benign or malignant nature of the ulcer.[6] Lesions in the immediate prepyloric area sometimes may not be visualized due to associated mucosal edema and antral deformity; however, the majority of gastric ulcers will be seen.

Emergency esophagoscopy and gastroscopy has now become a major diagnostic technique in the evaluation of upper gastrointestinal bleeding. At many centers endoscopy is performed immediately after stabilization is accomplished. The technique not only affords an opportunity to observe pathologic abnormalities shortly after hospital admission but allows the gastroenterologist to determine with accuracy the exact site of bleeding.[7] The presence of esophageal varices as demonstrated by X-ray in a patient with gastrointestinal bleeding does not establish the diagnosis of bleeding esophageal varices. Not infrequently the varices will be demonstrated to be intact by endoscopy and the bleeding shown to be due to acute mucosal erosions of the stomach, diffuse gastritis, or gastric or duodenal ulceration. With the increasing reports of morbidity and mortality from therapeutic measures directed at the control of bleeding esophageal varices it is clear that the diagnosis must be firmly established before high-risk therapeutic measures such as esophageal tamponade are undertaken.

The Mallory-Weiss syndrome consists of gastrointestinal bleeding secondary to longitudinally placed lacerations of the mucosa at or slightly below the gastroesophageal junction. The lesion is said to follow prolonged and forceful vomiting, although on several occasions I have seen it following minimal vomiting. The diagnosis can be made only endoscopically or at surgery or autopsy because the slitlike lacerations are too small to be detected radiographically.

With increased use of endoscopy in the evaluation of upper gastrointestinal bleeding it is clear that one can no longer ascribe the major source of bleeding to peptic ulceration. Acute erosions of the gastric mucosa have been the most frequent cause of upper gastrointestinal bleeding in several large series in which endoscopy has been used in the acute evaluation of the bleeding patient.[8] These lesions are quite superficial, may bleed massively, are extremely difficult to demonstrate radiographically, and have multiple etiologies. This lesion does not appear to be related only to peptic injury of the mucosa of the stomach since it has been observed repeatedly in patients with achlorhydria and gastric atrophy. Use of aspirin and some other drugs and complex neurohumeral mechanisms may be responsible in some instances.[9]

The demonstration by X-ray of a deformed duodenal bulb in a patient with upper gastrointestinal bleeding must be interpreted with caution. Care must be taken to exclude the possibility of bleeding from other sites because the deformity may be old and unrelated to the clinical situation. As of now an instrument is not available which will allow consistent visualization of the duodenal bulb.[10] Frequently, however, in the course of evaluating upper gastrointestinal bleeding the endoscopist may observe blood refluxing back into the stomach through the pylorus. This finding in conjunction with negative findings in the esophagus and stomach is almost diagnostic of bleeding within the duodenal bulb.

Summary

Esophagogastric endoscopy in experienced hands is a useful and safe method for diagnostic evaluation of lesions of the esophagus and stomach. The procedure is of value not only in clarifying the etiology of known lesions but in the investigation of the symptomatic "radiographically normal" patient. The indications and contraindications for endoscopy of the esophagus and stomach have been reviewed briefly.

(*Continued on page 264*)

The Unclassified Missed Abortion

AARON H. GERBER, M.D., F.A.C.O.G., F.A.C.S.,* AND JACQUES KLINGER, M.D.†

HITHERTO ACCURATE CLASSIFICATION of missed abortion had only limited statistical value.

There is an increasing awareness of blood coagulation defects complicating retention of a dead ovum. As the underlying mechanism is being better understood there is a complete reversal in our treatment pattern. Thus, active early intervention and in selected cases the use of anticoagulants are becoming the preferential mode of therapy.[1] In this context it is justifiable to review our definition of missed abortion in order to judge its effect upon management.[2] If, as clinical impression suggests, the definition is too rigid or arbitrary, certain cases of retained dead ovum are needlessly excluded. It is no longer mere semantics, but on the contrary, these excluded patients are deprived of the benefit of proper treatment.

"Missed abortion" is defined by Dorland as a "retention of a dead ovum in the uterus for at least 2 months." It is accepted as a distinct disease entity and is listed as such in the Standard Nomenclature of Diseases and Operations. Litzenberg is credited by Te Linde[3] as "having arbitrarily placed a limit of 2 months after the death of the fetus as the borderline between abortion and missed abortion." Rock and Maillot[4] state that "arbitrarily, if a period of more than 2 months elapse between termination of gestation and rejection of the products the condition may be diagnosed as a missed abortion."

A number of well-known obstetrical texts, Eastman and Hellman,[5] Greenhill,[6] Claye and Bourne,[7] refer to Streeter's investigations[8] in 1930, on the basis of which he concluded that the range of retention of a dead fetus may vary from several days to several months, but the average will be about 6 weeks. These texts[5, 6] also restrict the definition of missed abortion to a retention of the products of conception for 2 or more months after death. Therefore, it would appear that the concept of missed abortion has evolved from a rather loosely defined term of a retention "for some time" after fetal death (Beck[9]) or "a condition in which the fetus had died but the products of conception are not expelled within 2 weeks" (Gould[10]).

In order to determine the effects of the application of such nomenclature, all abortions admitted to our Gynecological Department† for the period of 1963–1967 were reviewed. Therapeutic abortions, moles, and threatened abortions were excluded. A residue of 1,107 cases were analyzed (table 1). Difficulties were encountered in the proper classification of these cases. This was due to the impossibility of accurately estimating the true interval between the time of fetal death and the examination. Data based upon the last normal menstrual period are notoriously unreliable, and conclusions based upon estimation of the size of the uterus and development of the fetus must be regarded circumspectly in view of the well-known progressive diminution in the size of the uterus and atrophy of the fetus following death.[11, 12] In those cases in which failure of uterine growth could not be verified by subsequent reëxamination the diagnosis of missed abortion had to remain presumptive.

TABLE 1: Summary of Material

Duration of Retention of Dead Fetus	No. Cases	Per cent
Two months and over	43	3.88
Under 2 months (exclusive of complete and incomplete)	137	12.37
Complete and incomplete abortions	927	83.75
TOTAL	1,107	100.00

In 43 cases, or 3.88 per cent of the total series (table 1), an interval of 8 weeks or more elapsed after fetal death, so that these cases were classified as missed abortions. This incidence is almost twice the frequency mentioned by Rock and Maillot.[4] There remained a group of 137 cases (12.37 per cent) (table 2) which were not by definition missed abortions. Nor could they be classified with the remainder of the complete or incomplete abortions or the abortions in progress. These cases presented certain characteristics in common: The anamnesis usually revealed a period of amenorrhea of 4 to 8 weeks, occasionally a positive urinary test for pregnancy, followed later by a negative test, some bloody vaginal discharge, a cessation of subjective symptoms of pregnancy, and on examination in the vast majority of cases an excessively firm uterus not commensurate with the period of amenorrhea, and a tightly closed cervix. It is clear that if evacuation of the uterus had been postponed for a week or 2 in a number of these cases they would then have fitted the criteria acceptable under the definition of missed abortion. Also, it was apparent that in a number of instances it was difficult to establish the exact date of fetal demise. Therefore, some of these cases were in reality missed abortions. This group was classified into 3 subgroups (table 2) on the basis of a 2-week time increment elapsing since fetal death. Analysis of this group of 137 cases revealed that 76 cases could not be properly classified because of the lack of reliable data as to the last menstrual period. It will be seen that of the remaining 61 cases, 48 (78.69 per cent) fell into the subgroups of retention of the dead fetus for more than 4 weeks but less than 8 weeks.

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* Address: 2915 Connecticut Avenue, N.W., Washington, D. C. 20008.

† Gynecological Department, Government Hospital, Zefat, Israel.

TABLE 2: Unclassified Missed Abortion (Corrected) on the Basis of Duration of Retention of Dead Fetus

Duration of Retention of Dead Fetus (*weeks*)	No. Cases	Per cent
More than 2 but less than 4	13	21.34
More than 4 but less than 6	22	36.02
More than 6 but less than 8	26	42.67
TOTAL	61	100.00

Discussion

These results would tend to support the clinical impression that there is a significant group of abortions which at the present time are excluded from the class of missed abortions on the basis of a currently employed definition. We found it impossible to distinguish clinically between the last 2 groups in table 2 and the missed abortions listed in table 1 which fulfill the criteria of the accepted definition. If one considers the reported complications which are encountered with missed abortion, such as hypofibrinogenemia,[13] hemorrhage, and a high rate of infection,[5] the importance of proper classification is immediately apparent. In the realm of therapy, in both of these groups there are similarities in the technical conditions and problems which are encountered. In both groups one is confronted with a closed cervix and a refractory uterus. In the light of the acknowledged advantages of the current trend of early evacuation,[13] proper classification becomes particularly important.

Summary and Conclusions

A review of 1,107 cases of abortion yielded 43 cases or 3.88 per cent which met the standard definition of missed abortion. Excluded by definition, but indistinguishable clinically, was an additional group of 137 cases (12.37 per cent).

The "excluded group" was further corrected (omitting cases with a questionable menstrual listing), yielding 48 cases (78.69 per cent) of the corrected series in which the dead fetus was retained for more than 4 but less than 8 weeks.

In view of the current trend of treatment of missed abortion by search for coagulation defects and active intervention it is essential to bear in mind that the concomitant complications are equally applicable to the clinically related but excluded group.[13, 14]

It is therefore suggested that the definition of missed abortion be reassessed and that it either be broadened or that the related groups be designated as "early missed abortions."

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An Emergency Air-Ground Transport System for Newborn Infants with Respiratory Distress Syndrome

LEON J. ARP, Ph.D.,* R. E. DILLON,† MARY TOM LONG, M.D.,‡ AND C. L. BOATWRIGHT, M.D.§

RESPIRATORY DISTRESS in the newborn infant has been the largest single cause of death during the first week of life. About 17 per cent of all premature infants are affected by respiratory distress and about half of them die. About 25,000 infants die each year in the United States.[1] This number represents between 30 and 40 per cent of all newborn deaths.[2] Nearly half of the infants weighing less than 3½ pounds who now survive their respiratory distress may be mentally defective.[3] Dr. J. F. Lucey, writing in the January, 1968 issue of *Hospital Practices*, cites a study carried out at the Boston Lying-in Hospital where it was found that mortality among premature infants accounted for 71 per cent of all live-born infant deaths. The death rate in low birth-weight infants was said to have shown "... no improvement in 21 years. . . ."

These grim statistics do more than suggest that high-risk infants delivered in the average hospital in this country face great hazards. Indecision, uncertainty, and delay in resuscitation and treatment can result in irreversible anoxic tissue damage to the brain and other vital organs. The tragic results, many times ascribed to immaturity rather than anoxia, are known all too well. The wait-and-see, hands-off procedures with oxygen and buffer therapy alone for treating respiratory distress have proved inadequate.

Newborn Intensive Care Nurseries are needed throughout the country. However, the specially trained personnel and new equipment designed specifically for the newborn infant are not generally available.

A dramatic decrease in infant morbidity and mortality rates has been achieved when nursing personnel trained in the use of a special infant respirator, blood-gas, and physiologic monitoring equipment have been available.[4, 5] The average survival rate which can be expected for all infants weighing no more than 1,000 Gm. (2 pounds, 3 ounces) is about 10 to 15 per cent.[6] These figures include those not afflicted with the respiratory distress syndrome (R.D.S). In contrast, the survival rate for infants weighing no more than 1,000 Gm. with all 19 infants with respiratory distress, in a study by Arp et al,[4, 5] was 31.7 per cent. Special equipment for treating the distressed infant provided a similar striking improvement in the survival rate for infants weighing no more than 1,500 Gm. (3 pounds, 5 ounces) in whom the normal survival rate for all infants in this weight group, including those who were not in respiratory distress, is about 29.3 per cent.[6] The survival rate in the study by Arp et al for 42 infants, with all infants in respiratory distress and weighing no more than 1,500 Gm., was 47.6 per cent.

A Plan for the Immediate Future

It is unlikely that every hospital will be able to assemble and train a team of specialists to cope with the vexing problems associated with the distressed newborn in the very near future. In addition, the special infant respirators needed for the successful treatment of the newborn respiratory distress syndrome will not be generally available for some time. Blood-gas analyzing and physiologic monitoring equipment is expensive and requires very skilled and specially trained nurses and/or technicians. Personnel with this specialized training are not readily available. The most difficult problem to solve, however, is that of convincing the nursing supervisors and the hospital administrators that each distressed newborn must have a graduate or licensed practical nurse for uninterrupted observation and attention as long as the physician carries the infant on the

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* Professor of Industrial Engineering and Chairman, Division of Engineering Fundamentals, Virginia Polytechnic Institute, Blacksburg, Va. 24061.

† Instrument Supervisor, Virginia Polytechnic Institute.

‡ Student Health Service, Virginia Polytechnic Institute.

§ Address: Church Street, Blacksburg, Va. 24061.

"critical" list. Each graduate or licensed practical nurse can manage 2 infants only after the patient is removed from the "critical" list.

In view of the requirements just outlined it becomes very clear that all hospitals cannot in the very near future support and operate an Intensive Care Nursery since it must be structured in order to reduce today's tragic infant morbidity and mortality rates. Intensive Care Nurseries must be established in population centers to provide the best medical care known today to the largest number of people. Infants from less populated areas will need to be transported to these specially staffed and equipped Intensive Care Nurseries. New transport systems must be devised to reduce the time and risks involved in moving the high-risk patients to the centers before the patient becomes critically ill. Physicians will be called upon to make the decision to transfer patients long before they can be absolutely certain that the patients will not survive in the average hospital. The patients must be viable when they arrive at the Intensive Care Nursery. New equipment and techniques cannot perform the miracle of restoring life to the dead.

A very general plan has been outlined for supplying the best medical care known for the distressed newborn. This plan has been put into operation by the Virginia Polytechnic Institute, Blacksburg, Virginia in coöperation with the Roanoke Memorial Hospitals, Roanoke, Virginia.

A New Transport System for Infants with R.D.S.

A twin-engine Beechcraft airplane has been made available by Virginia Polytechnic Institute's President, Dr. T. Marshall Hahn, Jr., for transporting newborn infants with respiratory distress from hospitals lacking the needed specialized staff and equipment to the Intensive Care Nursery at the Roanoke Memorial Hospitals. The transport service to be described will be available at the request of physicians and without charge until the new infant respirator becomes available commercially. The V.P.I. airplane can land at any hard-surfaced airport having a runway at least 2,800 feet long. The runway must be lighted for a night flight. The service may be obtained any time of the day or night that the airplane and infant respirators are not in use. To obtain this service or information call Dr. L. J. Arp, Area Code 703-552-6574 or 703-552-1162, or Mr. R. E. Dillon, Area Code 703-552-2507.

Figures 1, 2, and 3 show the airplane equipped with an Arp Infant Respirator, an Armstrong Servo-Control Incubator,* a solid state static inverter† to convert the airplane's 28-volt power supply to 117 volts, and a redundant oxygen supply. The volunteer flight crew includes the pilot, Mr. E. S. Warner, the co-pilot, Mr. Bill Byrne, L. J. Arp, Ph.D., Mr. R. E. Dillon, and Mary Tom Long, M.D., or C. L. Boatwright, M.D.

V.P.I. AIRPORT

FIG. 1. The V.P.I. airplane.

When a request is received for emergency air transportation for a distressed infant the physician in charge of the transfer is requested to "stand by" at the hospital with the infant in a warm incubator containing an atmosphere of 100 per cent oxygen. As the pilot approaches the pick-up point and a precise landing time becomes known, the control tower is requested to call the waiting physician to give him the landing time. If refueling is required, the completion time for this operation is passed on to the physician so that there is no delay in the transfer of the infant to the airplane system. The

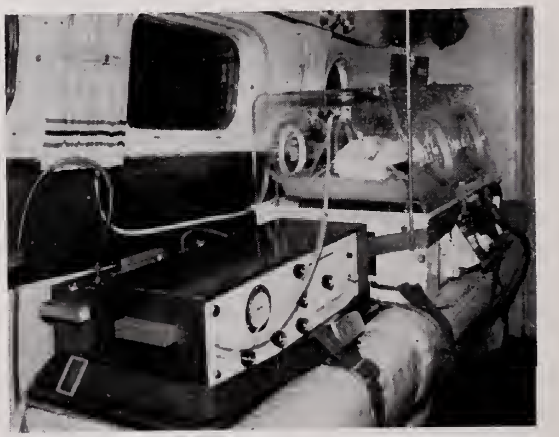

FIG. 2. The Arp Infant Respirator and the Armstrong Servo-Control Incubator.

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* Supplied by Ohio Medical Products, Inc., 1400 East Washington Avenue, Madison, Wisconsin.

† Supplied by Communications Measurements Laboratory, Inc., 350 Leland Avenue, Plainfield, New Jersey.

infant in respiratory distress is transferred to the special holding and positioning fixture in the Armstrong Incubator. A restraining blanket is placed around the holding fixture as a safety belt for the infant. After respiratory assistance is started with the Arp Infant Respirator with a nose mask as the patient-machine interface[4, 5] the airplane is ready to take off for the Roanoke airport.

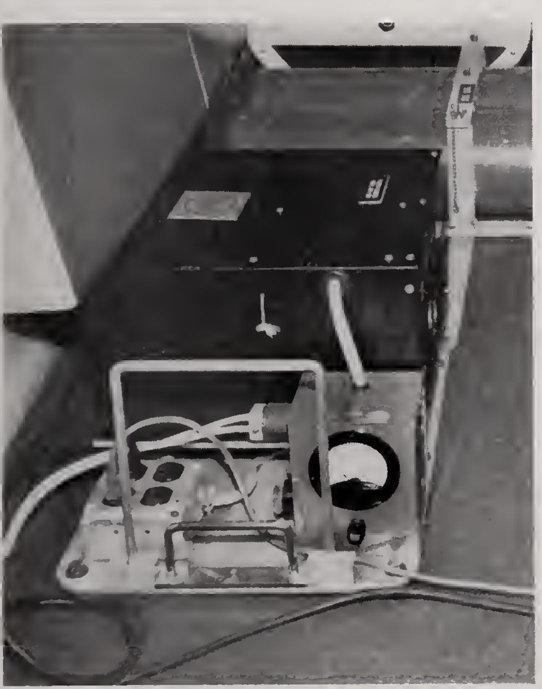

FIG. 3. The C.M.L. Static Inverter power supply.

As the pilot nears the Roanoke airport and the arrival time becomes known the control tower is requested to notify the Intensive Care Nursery at the Roanoke Memorial Hospitals of the arrival time. Figure 4 shows the specially equipped ambulance with redundant oxygen supply, a battery-powered inverter to supply 117 volts, alternating current to power the incubator, and the self-contained respirator which is dispatched with a nurse from the Intensive Care Nursery to meet the arriving patient. The incubator is transferred from the airplane to the ambulance support-system without interrupting respiratory assistance. The ambulance support-system is then rolled up a special ramp into the waiting ambulance (figure 5). The entire portable unit is then clamped securely in place to prevent any shifting of the unit during the trip from the airport to the hospital. Respiratory assistance remains uninterrupted as the infant is transferred from the ambulance, up the elevator, and into the Intensive Care Nursery.

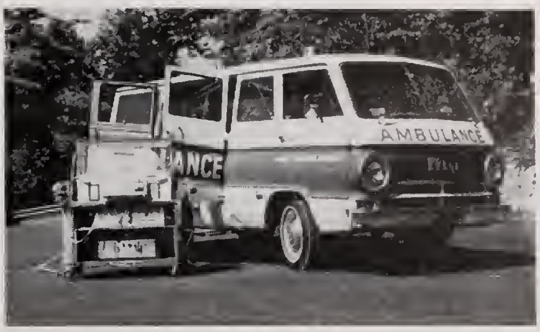

FIG. 4. The transport ambulance system.

Use of the battery-powered respiratory support unit from the ambulance is not limited to the transfer of distressed infants from the airport to the hospital. This unit is used to supply respiratory support for infants during transfer from nearby hospitals to the Intensive Care Nursery when it is either impossible or impractical to use the airplane. The portable unit is on standby in the delivery suite and in surgery for all deliveries and cesarean sections. The unit is also used to supply uninterrupted respiratory support while the infant is transported to the X-ray department, during radiologic observations, and while using the X-ray intensifier. It has been observed that an interruption in respiratory support for even a minute or 2 can trigger irreversible changes in the patient which will cause death.

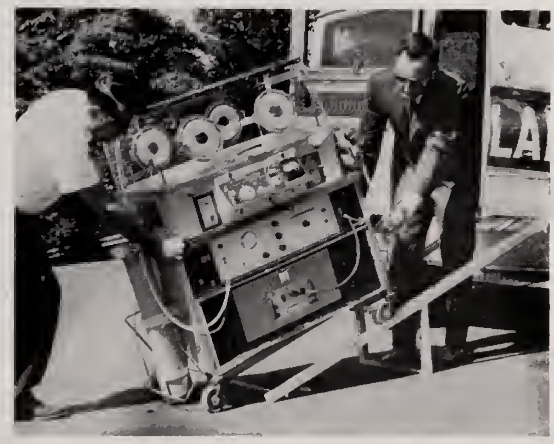

FIG. 5. Respiratory support continues uninterrupted throughout transfer.

Conclusions

The degree of success in reducing newborn infant morbidity and mortality by supplying respiratory assistance is directly related to the condition of the infant at the time he is provided that assistance. It has been found that the transfer is generally an exercise in utter futility if the referring physician delays in transferring the distressed infant until he is quite sure that the infant will not survive in the local hospital nursery. The concept of the absolute necessity for an early transfer and start of intensive and comprehensive support for the distressed infant has been most difficult to convey. The last-ditch stand by a physician using oxygen and buffer therapy has been proved to be inadequate in many cases. No surgeon waits for a vermiform appendix to perforate before taking a patient into surgery. Likewise, the infant with R.D.S. has the best chance for survival if respiratory assistance is started immediately after the first clinical signs of trouble are observed.

The integrated air-ground transport and support systems described in this paper have been used successfully. The key to this successful operation is teamwork. This teamwork can only be accomplished through education, training, and dedication to the idea that better treatment is possible and can become a reality through coöperative understanding and advanced planning. Once the hardware and support teams are available, the only obstacles remaining in the path leading toward success are indecision and delays.

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Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	Mortality Rates		Hospitalization Rates (Morbidity)
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching.

The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin. Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test; pregnanediol determination.

References: 1. Inman, W. H. W., and Vessey, M. P.: Brit. Med. J. 2:193-199 (April 27) 1968. 2. Vessey, M. P., and Doll, R.: Brit. Med. J. 2:199-205 (April 27) 1968.

Before prescribing see Detailed Product Information.

SEARLE
Where "The Pill" Began
G. D. SEARLE & CO., P. O. Box 5110, Chicago, Illinois 60680

In the complex picture of moderate to severe anxiety...

there is a new reason for prescribing Mellaril (Thioridazine HCl)

effectiveness in mixed anxiety-depression

Long recognized for its usefulness in the treatment of moderate to severe anxiety, Mellaril is now also known to be effective against mixed anxiety-depression.

Often the symptoms of anxiety states are difficult to sort out—even with the most careful probing. The patient may manifest symptoms of agitation, restlessness, insomnia, somatic complaints. But what of the depression that may be mixed in the total picture? It is reassuring to know that Mellaril may be prescribed—with strong possibilities of success—when there is anxiety alone or a mixture of anxiety and depression.

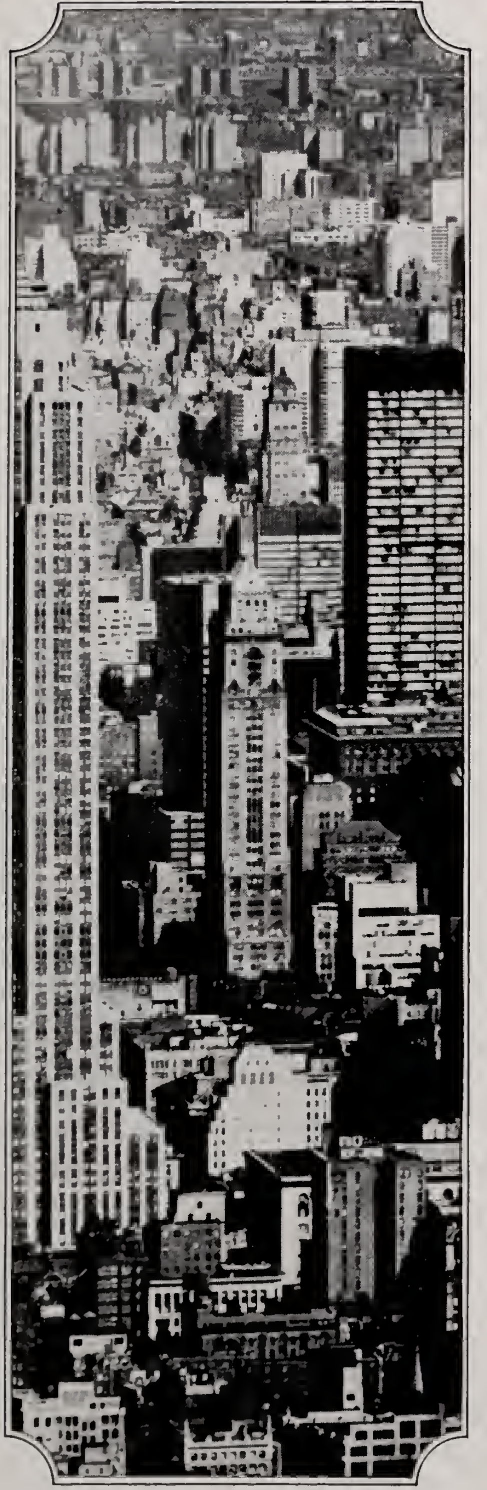
Before prescribing or administering, see Sandoz literature for full product information, including adverse reactions reported with phenothiazines. The following is a brief precautionary statement.
Contraindications: Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.
Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reaction (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.
Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.
Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine hydrochloride). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

Mellaril®
(Thioridazine HCl)
25 mg. t.i.d.

for moderate to severe anxiety and mixed anxiety-depression

SANDOZ

SANDOZ PHARMACEUTICALS, HANOVER, N. J. 68-169



118th Annual Convention
AMA
NEW YORK CITY
JULY 13-17, 1969

The magnetism and the grandeur that characterizes New York City will provide a superb setting for AMA's 118th Annual Convention in July. Plan to attend now and look forward to five memorable and stimulating convention days in a city of unlimited excitement.

Continue your postgraduate education with a varied program of • four General Scientific Meetings on Chronic Pulmonary Insufficiency and Problems of Air Pollution, Human Sexuality, Impact of Medical Education on Patient Care, and Physical Fitness and Aging • 23 Section Programs • Color Television • Medical Motion Pictures • and over 700 scientific and industrial exhibits. The nation's outstanding medical authorities will lecture and discuss the significant advances in today's medicine.

In addition the AMA TV network will present more than 40 hours of convention programming.

Reserve now for the Scientific Awards Dinner in honor of the Scientific Award Winners—Wednesday, July 16, 1969. Since space is limited, we suggest you make your reservations before June 30, 1969. Tickets are $10.00 each, payable in advance.

The complete scientific program, plus forms for advance registration and hotel accommodations, will be featured in JAMA, May 26, 1969.

NEW YORK CITY, NEW YORK • JULY 13-17, 1969
AMERICAN MEDICAL ASSOCIATION'S 118th ANNUAL CONVENTION

President's Page

UNIVERSITY CLINIC

The formal dedication of the George Washington University Clinic occurred, April 27, 1969. Soon the new emergency room at the Hospital will be ready to serve the City.

The University Clinic, a new facility for this community, will serve many useful purposes, but it faces many problems. The Clinic must give financial support to the Medical School in order that an increasing number of medical students get increasingly superior training to help fill the need for more highly trained physicians to care for the expanding health needs in this country. The Clinic must establish adequate salaries and benefits to attract superior teachers and give them time to teach. The Clinic must find adequate incentives for the physicians to keep them at top level as educators.

The public must be given sufficiently high quality care to compensate for the inconveniences and high cost of University Clinic services by physicians who must devote a large part of their time to teaching. The Clinic will need to find the means of maintaining a good relationship with private physicians in the area. The loss of patients to the Clinic and the necessity of reserving more if not all beds in the University Hospital for the Clinic physicians will require some compensating service to the outside physician. It can and must be done.

I wish the University Clinic every success. I hope that members of the Medical Society of the District of Columbia will give it their support.

Editorials

The New George Washington Clinic

The George Washington University Medical Center brings a new clinical facility into its total teaching and patient-care program. The Clinic houses an academic group practice that will greatly increase our ability to use new ways of providing health care and to teach the doctors of tomorrow.

The last 2 decades have seen sweeping changes in medicine. New drugs, new vaccines, new surgical methods, and a parade of therapeutic advances mean that today's physician must remain a "student" forever in order to stay competent. Computers are transforming our methods of diagnosis and research. Aerospace technology is providing new tools for treatment and rehabilitation. We see the rise of superspecialists who know more about a small part of the body than we knew about the entire human being a few short decades ago.

Medicine has become so complex that it is impossible for any physician to rely entirely on his own resources to meet adequately all the needs of his patients.

With all our advances we need "physicians who can put medicine together again." To provide comprehensive, one-stop care for the patient, today's doctor must turn to teamwork. Group practice makes teamwork easier.

For our students this Clinic means an immediate broadening in the learning experience. Medical education is changing. The attitude toward students once was, "Thou shalt do this or that." Today, our attitude in directing the education of young men and women in medicine is, "Come along and help me care for this patient." The hard bench and the long wait are gone. Equal facilities are provided for all patients, and all come by appointment. The student sees not only desperately ill patients but all others; he observes how to keep reasonably well people healthy; he learns something about the practice of preventive medicine; and he is introduced to the economics of health care.

Whether group practice is, as some have stated, the "pattern of tomorrow's medicine," I do not predict. There has been too much change in medicine to predict anything with certainty. But this much is clear: The University Clinic is one of the avenues that must be explored if we are to keep pace with our responsibilities to teach and to provide quality patient care.

John Parks, M.D.
Dean, George Washington University Medical Center

A New Approach to the Manpower Crisis in Health Care*

In addition to the revolution in medical science that demands teamwork in providing quality health care, there is a national health manpower crisis that demands new approaches to the delivery of health services.

Here at George Washington we shall increase our entering medical student enrollment 40 per cent by 1971. But even if every medical school in the Nation did the same, we would still fall far short of projected requirements for our cities and rural areas. A solution to the doctor shortage is yet to come.

To meet the health manpower crisis we have no choice but to reorganize traditional methods of delivering health care. I think this Clinic is part of the answer.

There are now 88 physicians in our academic

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* These remarks were prepared for presentation at a press conference and preview of the University Clinic, March 20, 1969.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

group practice. In these new quarters we shall see all our patients, both the indigent who used to wait on hard benches in the old Clinic and the so-called private patients whom we saw in separate, more comfortable offices. Everybody gets the same quality of care in the same environment.

All of the doctors in the Clinic are on the teaching faculty of the Medical Center and all are on salary. The income from the care of patients contributes to support the Medical Center.

Services of the Clinic include internal medicine and all the major specialties except pediatrics. The impending affiliation with the Children's Hospital of D. C. will transfer pediatric responsibility to that institution under University direction.

Some of the advantages of practicing together in the University Clinic are immediately obvious. Informal consultation with other specialists is easier when you are rubbing elbows. The level of your own practice is sharpened when you perform under the scrutiny of your peers, as you do in a setting of this kind. A group practice saves the patient's time and money since he need not travel around the city from doctor to doctor—all are in the same building. And the patient has a personal physician in all his dealings with specialists. One of the physicians in general medicine will know the individual, maintain a continuing relationship with him, and direct the care he needs.

It seems a paradox, but given the complexity of today's medicine, group practice may well be one of the surest ways to get personal medical care.

There are obvious economies possible in the use of new and costly medical equipment when it is shared among as many physicians as there are in this building. With an associate in charge of clinic administration, Mr. Franc Ferraraccio, and his staff, the physicians can spend more time practicing medicine and less time on administrative work, for which doctors are not always well prepared and usually do not like.

Stretching the physician's time may well be the biggest contribution of group practice. It has been predicted that in group practice physicians could see 20 per cent more patients and give high quality individual care at 20 to 30 per cent less cost. Perhaps we can. We don't know yet. That is one of the things we shall be able to test here in the Clinic, but we do not intend to trade output for quality.

Finally, we are going to experiment with new ways of saving the doctor's time for treatment and diagnosis. As you probably know, medical tests and history-taking take a lot of precious professional time. We think we can save some of that.

Recently, Secretary of Health, Education, and Welfare Robert Finch had this to say about the problem of health care: "We must break out of the hospital syndrome by providing good medical care for people who now generally get it only when a physician puts them in a hospital." The Secretary urged that nonhospital-care institutions and services be put to more extensive use than ever before. We believe this Clinic represents exactly that kind of initiative.

James J. Feffer, M.D.
Chief of Staff, George Washington University Clinic

Educational or Obscene Literature?

Over the past few months many physicians and dentists in the Washington area have been deluged with requests through the mail to purchase "revealing and shocking" sex books and allied material. The offers have varied from several lists of small pamphlets to a 3-volume set which is purported to be "your Ph.D. in sex." The pictures range from color pictures of a nude female in seductive poses to a motion picture film detailing the actual sex act in man and woman.

Perhaps we are to assume that such material is offered primarily as "educational," because if obscene it could not be sent through the U.S. mails. Yet an intelligent appraisal of much of the material so offered leaves little to suggest it is educational (at least from the standpoint of useful education) or of "redeeming social value."

In a mailing received in November 1968 I was offered 2 books whose authors were credited with M.D. degrees, yet neither can be found listed as a licensed physician anywhere in the United States. One of these books offers a rather wide range of sex information, much of which appears to be acceptable in the realm of normal marital relations. The other allegedly M.D.-authored book is entitled "Bestiality in Men and Women." It offers "shocking case histories" and even full-color photographs of the perversions! With the exception of physicians who actually treat persons with sexual deviations, or clergymen giving spiritual aid to these persons, very few would ever need such a book. And doctors and clergymen hardly need the pictures!

Another offering in the same mailing listed a book on fellatio written by a Ph.D. He included 3 case histories of high school girls, one each from low-, middle-, and high-income families, who were engaging in such perversion!

There is no need to recount more of the unpleasant and sordid details offered by these case histories, discussions, and illustrations, but let us not forget that some of this material is falling into the hands of teen-agers. I am certain too that most of my fellow physicians would not want their secretaries exposed to such material in the simple process of "opening the doctor's mail." I might add that none of the advertising fliers had any words or suggestions about therapy.

In our country there is a postal obscenity statute, and the Chief Postal Inspector has informed me that the United States Attorney is considering legal action against some of the senders of these advertisements. However, the main problem is one of establishing that the material offered is obscene. The Inspector quoted a U.S. Supreme Court Opinion in Memoirs v. Mass (383 U.S. 413):

> "We defined obscenity in Roth in the following terms: 'Whether to the average person, applying contemporary community standards, the dominant theme of the material taken as a whole appeals to prurient interest.' Under this definition, as elaborated in subsequent cases, 3 elements must coalesce: It must be established that (a) the dominant theme of the material taken as a whole appeals to a prurient interest in sex; (b) the material is patently offensive because it affronts contemporary community standards relating to the description or representation of sexual matters; and (c) the material is utterly without redeeming social value."

In an earlier decision the Supreme Court stated in part: "Of course not every portrayal of male or female nudity is obscene." (I agree.)

What then can we do about these unwanted mailings?

First, we can obtain a copy of P.O.D. Publication 123 and send the material to the local postmaster. As a result these companies will be prohibited from sending more such material, under penalty of Federal prosecution. If every physician who receives such material did this it might create a problem for the senders and might help to cut down these mailings, especially from those who claim their material is directed toward the medical profession.

Drug Dependence Cocaine

Cocaine, called the leaf, snow or speedballs (when mixed with heroin), is extracted from the leaves of the coca bush. It is a white, odorless, fluffy powder that looks like crystalline snow.

A surface-active anesthetic, cocaine by most abusers is taken orally or, most commonly, intravenously alone, combined with or alternating with heroin. The coca leaves are chewed with lime, producing the effects of the contained cocaine.

Oral use is said to relieve hunger and fatigue and to produce some degree of exhilaration. Intravenous use produces marked psychotoxic effects or hallucinations with paranoid tendencies. Repetitive doses lead to maniacal excitation, muscular twitching, and convulsive movements.

Dilated pupils, hyperactive, exhilarated paranoic—these are signs of the abuser.

Convulsions and death may occur from overdose. There may be paranoic activity. Cocaine may produce very strong psychic but no physical dependence and no tolerance.

Or, send the material to your Congressman (D.C.—your Mayor) to insure that he knows what is being sent through the mails. Perhaps more Congressmen would then favor legislation to make such mailings illegal. I have been told by a member of the present Congress that many fine bills have been introduced over the past several sessions just for this purpose but all have "died" because of lack of support. If every physician in the U.S. who got such material contacted his Congressman and urged others who receive similar material to do so, I believe corrective legislation would be passed.

Further, one might ask for help in this cause from the Executive Branch. In 1967 the President signed into law a bill establishing a Commission on Obscenity and Pornography. It was supposed to complete a report by January 31, 1970. I have been told recently that the Executive Department does know about these sex-ad mailings, but it probably would help to have formal complaints from interested, responsible citizens.

Lastly, an appeal to the courts, especially the Supreme Court (if anyone has suitable contacts in this area), might be very helpful. I just wonder how many of the Justices of our Supreme Court would like to receive such material in their homes or in their offices?

I believe doctors should be concerned about this

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An easy solution to the problem of nasal symptoms of hay fever, colds and sinusitis

- easy to prescribe: just write NTZ Nasal Spray.
- easy to recommend: just say NTZ Nasal Spray.
- easy to use: just one spray in each nostril, quickly followed by a second spray. Repeat q. 3 h. or q. 4 h. for temporary relief.
- easy to dispense: the outer sleeve of the package is removable for easy application of prescription label.
- easy to remember: as easy as NTZ.

But more than a simple vasoconstrictor:

NTZ Nasal Spray affords the well-known benefits of Neo-Synephrine®, 0.5 per cent, the more potent solution (adult strength) in a carefully balanced formula which includes:
N̲eo-Synephrine (brand of phenylephrine) HCl 0.5 per cent, decongestant
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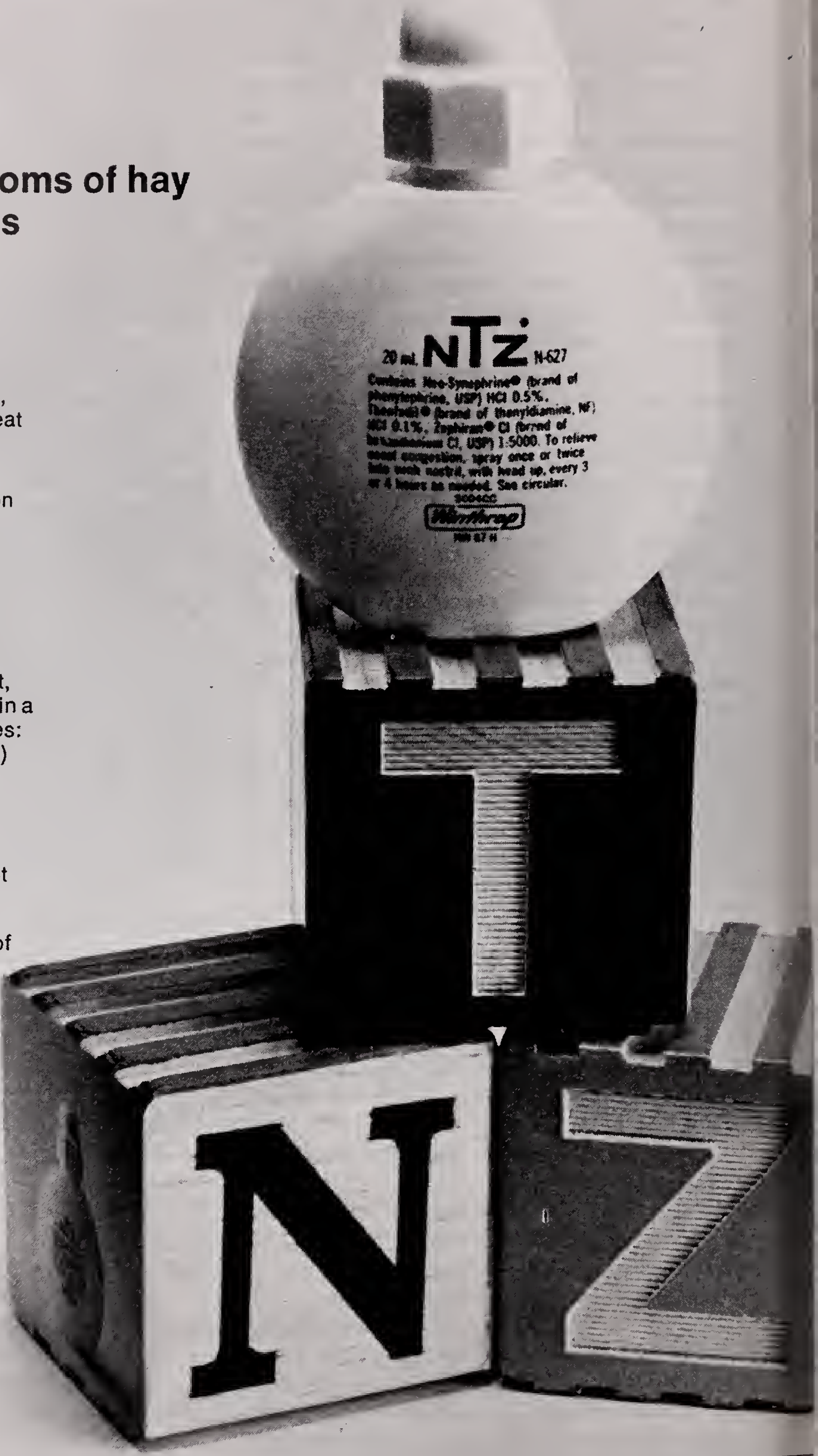
Available: NTZ Nasal Spray in squeeze bottles of 20 ml.; NTZ Solution in bottles of 1 oz. with dropper.



prescribe NTZ® Nasal Spray

(contains Neo-Synephrine)

Winthrop Laboratories, New York, N. Y. 10016 Winthro matter and so should the general public if we are to have a decent, moral society for ourselves and for our children. Aside from the theological aspects of morality, a pragmatic approach to human sexual behavior and practical social values would proscribe the dissemination of pictures and materials which portray the most extreme of sex perversions, since non-protest suggests condonance. How many of us really believe the mature American adult needs such aberrant sexual graphics?

Raymond A. Osbourn, M.D.

Report on Second National Medicolegal Symposium

Dr. Frank S. Bacon, President of the Medical Society of the District of Columbia, requested me to represent the Society at the Second National Medicolegal Symposium, which was held in Las Vegas, Nevada, March 13–15, 1969. The attendance was between 750 and 800.

This national forum for physicians and attorneys is sponsored jointly by the American Medical Association and the American Bar Association. It aims to promote mutual knowledge, appreciation, and understanding between the 2 professions, law and medicine, affording an opportunity for lawyers and doctors to discuss matters of common interest and to seek solutions to interprofessional differences. Outstanding teachers and spokesmen of both professions presented stimulating and enlightening opinions and information on many medicolegal matters.

This Medicolegal Symposium will be scheduled every other year; the first such meeting was held 2 years ago in Miami Beach, Florida. Among the topics widely discussed at this year's 3-day meeting were "informed consent," "newspaper publicity in malpractice cases," "group policy malpractice insurance protection," hospital records, "the Good Samaritan Law," "State control insurance plan for malpractice," "voluntary arbitration in malpractice claims," and "a review of medical society committees to review malpractice claims."

A dramatization of a homicide case stressing the importance of more competent medical examinations, including direct and cross-examination of medical witnesses on both sides, was very well presented. Questions and answers relating to "disability and physical impairments" and "life, death, and human transplantations" were also widely discussed. A 2-act vignette depicting "pretrial screening of malpractice claims," one showing the "New Mexico plan" and the other the "Portland plan," in the same case and under the same circumstances, was very well given and received. Legislative remedies to help minimize these claims were also taken up for discussion.

The D. C. Medical Society and the D. C. Bar Association might well consider inviting these 2 national organizations to hold one of their future symposia in Washington, D. C. This city is well prepared and able to handle such a meeting. In addition to enhancing their medicolegal knowledge our doctors and lawyers would improve the relationship between the legal and medical professions.

Samuel M. Becker, M.D.

Aids for Your Diabetic Patients

The Diabetes Association of the Washington, D. C. Metropolitan Area offers the following free services to your diabetic patients:

- An opportunity to talk to and exchange views with other diabetics who from firsthand experience can give encouragement and guidance to new and "problem" diabetics.
- Assistance by dietitians of the District of Columbia Dietetic Association in planning diabetic meals and diets.
- Information on how to get identification cards and emblems, books about diabetes, magazines for diabetics, cookbooks for diabetics, cartoon books for young diabetics, etc.
- Open meetings of the Association where the diabetic and his family can hear talks by recognized authorities on diabetes and exchange ideas with other diabetics.

Our Association and the Maryland Diabetes Association jointly support Camp Glyndon at Glyndon, Maryland, a summer camp for diabetic children living in the Washington-Maryland area.

The Association does not give medical advice but only information of a general nature to supplement your program of helping the diabetic adjust to his changed status and to live a normal and useful life.

E. Clarence Rice, M.D.
Executive Director, Diabetes Association of the Washington, D. C. Metropolitan Area

How to Get Paid for Treating Military Patients

Payment to civilian sources for emergency professional services rendered to military personnel who are on active duty (as contrasted to retired, or inactive members of the National Guard or Reserve) is the responsibility of the Surgeon of the geographical area in which such services are provided. Collection cannot be made from the Office for the Civilian Health and Medical Program for the Uniformed Services (OCHAMPUS), Denver, Colo., or its fiscal agents, who are responsible only for the payment of medical care rendered to authorized dependents and retired military personnel.

When a patient is identified as an Army member, on active duty, notification should be made immediately by telephone to the appropriate Army headquarters (for D. C. and nearby counties, see below), reporting where the individual is and the nature of the treatment required. The cost of the telephone call will be reimbursed with the other charges.

The Army Headquarters will advise the caller about the administrative management of the patient, and how to submit the bills for service.

HEADQUARTERS MILITARY DISTRICT OF WASHINGTON

Commanding General
Military District of Washington
Building T-B, Second and R Streets, S.W.
Washington, D. C. 20024
Telephone: weekdays (202) 695-7615; nights, weekends and holidays (202) 697-3722

GEOGRAPHICAL AREA

District of Columbia

Maryland counties:

- Calvert
- Charles
- Montgomery
- Prince Georges
- St. Mary's

City of Alexandria, Va.

Virginia counties:

- Arlington
- Fairfax
- King Georges
- Prince William
- Stafford
- Westmoreland

Family Medicine Approved as Primary Medical Specialty

A new specialty of Family Medicine was officially recognized by organized medicine in February when the Advisory Board for Medical Specialties and the Council on Medical Education of the American Medical Association approved a revised application for specialty status submitted by the American Academy of General Practice and the Section on General Practice of the AMA.

The new American Board of Family Practice is empowered by the decision to conduct examinations and to grant specialty certification to family physicians who meet its qualifications and pass the examination. This certification will be recognized by the AMA and other regulative bodies in medicine, just as other specialty groups are recognized.

The revised application for specialty status incorporated a new group of "Essentials for Graduate Training in Family Practice" approved by the AMA's Council on Medical Education and the House of Delegates. Currently, there are 32 residency training programs actually in operation or in development in medical schools and hospitals. The new specialty board requires 3 years of graduate (residency) training for eligibility to take the certification examination.

Family doctors now in practice will be eligible to take the examination upon showing evidence of having completed a minimum of 300 hours of accredited postgraduate study in medicine. As a practical matter, in most cases this would mean having been a member of the American Academy of General Practice for a period of 6 years. The AAGP requires its members to complete a minimum of 150 hours of approved postgraduate study during each 3-year membership period.

The by-laws of the new Board call for a termination of the "practice-eligible" category in 10 years, so that after that period only graduates of approved family practice residencies will be eligible for certification. There is no provision for "grandfathers"; certification can be achieved only by passing the examination, and periodic recertifications, also by examination, will be required. No other specialty board has a recertification provision.

The examination, which will be offered soon, was prepared by the National Board of Medical Examiners, Philadelphia, which designs most similar examinations for medical specialty boards, state licensing boards, and others.

Cardiostat T—a portable, direct-writing electrocardiograph which, despite its compact dimensions and light weight (approx. 10 lbs.), offers many of the advantages of the larger models: two speeds, full frequency response, variable sensitivity, automatic stylus adjustment, built-in shortwave filter. Works on battery or house current.

Paul Balgavy, Jr.
14614 Bauer Drive
Rockville, Maryland 20853
Tel. (301) 427-4959

Dear Mr. Balgavy:

OK, I'm interested. Please contact my office.

Dr. ______________________________

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STREET

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CITY STATE ZIP

Mail this coupon

for a free trial of this advanced, compact ECG machine

Meet the Cardiostat T—designed and manufactured by Siemens (a world leader in electronics)...distributed and serviced in this part of the United States by Geigy Medical Electronics...the Cardiostat T combines superb sensitivity to the myocardial events with ruggedness, dependability, ease of operation, small size and light weight. Its sophisticated circuits permit several exclusive features otherwise found only in larger machines. However, no list of specifications can recreate for you the "feel" of this unique diagnostic tool. You must work with one for a while! (Though, if you happen to appreciate fine cameras or hi-fi equipment, you may already have an idea of what's in store for you.) Even if you're not presently planning to buy new equipment, you owe it to yourself to investigate the advanced technology of this field. Return the coupon now and we'll arrange for a trial at our expense and your convenience!

Geigy Medical Electronics
Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York 10502

HEALTH DEPARTMENT NOTES

Use of Methadone

Two major health problems in the District of Columbia are alcoholism and drug addiction.

Until March, 1966, alcoholics in Washington were arrested by the police and sentenced by the courts. After serving a jail sentence, the alcoholic soon found himself drunk, only to be arrested again and sentenced.

With passage of the Easter Decision, alcoholics were considered sick, and medical care was made available instead of a jail cell.

Today, we have an alcoholic detoxification center for short-term care and a rehabilitation center for extended care and rehabilitation of alcoholics who are residents of the District of Columbia. A halfway house for those who have been rehabilitated and need a place to live until they become fully adjusted to community living also has been established. These facilities have helped to break the revolving-door concept of in and out of jail.

In 1968 provisional figures show that 4,117 patients were treated in the detoxification center, 2,485 were admitted to the rehabilitation center, and 58 were residents in the halfway house. Many of these were rehabilitated. They secured employment, rejoined their families, and are now living useful and productive lives. In addition, the court's calendars were cleared, making room for those who committed crimes.

Last year the D. C. Department of Public Health began a treatment program for drug addicts. In March, 1968 we opened a Drug Addiction Treatment and Rehabilitation Center at 1825 13th Street, N.W. Shortly thereafter the first of 2 planned satellite halfway houses was established. By year's end 722 patients had been admitted to the Treatment and Rehabilitation Center and 69 had been residents in the halfway houses. Medical care, including psychiatric care and rehabilitation, was provided. Patients join the program voluntarily. Some are referrals from private physicians, other health resources, courts, and correctional authorities.

As a possible expansion of this program we are considering the use of methadone. The Health Department has been authorized to use methadone for some time, but it only has been prescribed for some heroin-addicted patients with severe withdrawal symptoms.

We have met with representatives of various agencies in the country who have used methadone. I have appointed a committee of experts to investigate the long-term use of methadone, measuring potential success with current rehabilitation techniques. We will give much consideration to creation of a substitute dependency.

Any decision to use methadone with drug addicts would be based mainly on the following points: (1) Maintenance dosage of methadone has a stabilizing effect and produces no euphoria or other sensations once a person has become addicted; (2) therapeutic use of methadone permits many hard-line drug-users to become productive individuals, becoming an asset rather than a drain to the community; (3) cost of a daily maintenance dose for each addict is approximately 10 cents; and (4) the large number of crimes committed by drug-addicted individuals probably will be reduced.

If a policy utilizing methadone as a therapeutic measure is developed and a program offering it through local resources established, its ultimate use would quite possibly be restricted to those hard-core addicts who do not respond to drug-abstinence therapy through other drug addiction treatment and rehabilitation programs.

Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

NEW MEMBERS

Active

Joseph Carrel Chisholm, Jr., M.D. Office: 1806 D Street, N.E. Born in Detroit, Mich. Medical degree: Meharry Medical College, 1962. Specialty: Internal Medicine.

Milton Engel, M.D. Office: 1212 V Street, N.W. Born in Cleveland, Ohio. Medical degree: Albert Einstein College of Medicine, 1960. Specialty: Psychiatry.

Beltran Ricardo Galbis, M.D. Office: 1707 Rhode Island Avenue, N.W. Born in Havana, Cuba. Medical degree: Bowman Gray School of Medicine of Wake Forest College, 1960. Specialty: Psychiatry.

Melba L. McNeil Moore, M.D. Office: 1835 Eye Street, N.W. Born in Jackson County, Texas. Medical degree: Southwestern Medical College, 1944. Specialty: Pathology.

Henry Burtt Richardson, Jr., M.D. Office: 2125 13th Street, N.W. Born in Passaic, N.J. Medical degree: Temple University, 1960. Specialty: Pediatrics.

Howard Michael Silby, M.D. Office: Malcolm Grow Hospital, Andrews Air Force Base. Born in Cleveland, Ohio. Medical degree: University of Buffalo, 1962. Specialty: Neurology.

Roger Grave Thurston, M.D. Office: 753 19th Street, N.E. Born in Charlotte, N.C. Medical degree: Howard University, 1939. Specialty: General Practice.

Associate

Edward David Crockett, Jr., M.D. Office: Great Lakes Naval Hospital, Great Lakes, Illinois. Born in Chattanooga, Tenn. Medical degree: Howard University, 1962. Specialty: Internal Medicine.

Mary Alice Crockett, M.D. Office: Veterans Administration Hospital, Downey, Illinois. Born in Anderson, S.C. Medical degree: Howard University, 1962. Specialty: Internal Medicine.

Robert David Deitz, M.D. Office: Prince George's Plaza, Hyattsville, Md. Born in Washington, D.C. Medical degree: Jefferson Medical College, 1963. Specialty: Internal Medicine.

Peter Duus, M.D. Office: 6056 Central Avenue, Capital Heights, Md. Born in Tandslet, Denmark. Medical degree: University of Heidelberg, Germany, 1946. Specialty: General Practice.

Araceli Torredes Lagoc, M.D. Office: D. C. General Hospital. Born in Leyte, the Philippines. Medical degree: University of Santo Tomas, the Philippines, 1960. Specialty: Pediatrics.

Resident-Intern

Franz E. Marschall, M.D. Office: Hospital of St. Louis University, St. Louis, Mo. Born in Perth Amboy, N.J. Medical degree: Georgetown University, 1964. Specialty: Plastic Surgery.

T. Crowley Wilson, M.D. Office: Freedmen's Hospital. Born in Wildwood, Fla. Medical degree: Howard University, 1967. Specialty: Orthopedic Surgery.

Dr. Howard Named Top Administrator of AMA

Dr. Ernest B. Howard was named Executive Vice President of the American Medical Association by unanimous vote of the Board of Trustees at its meeting in Chicago, March 27. He had been Acting Executive Vice President since September 1968 and Assistant Executive Vice President since 1948. A graduate of Harvard University, he received his medical degree from Boston University School of Medicine in 1936.

Dr. Howard announced 2 top-level staff appointments, April 2. Mr. Jim Reed has been moved from Director of the Communications Division to Assistant to the Executive Vice President, and Mr. Charles S. Lauer replaces Mr. Reed as Director of AMA's Communications Division. Mr. Reed will be one of 2 assistants to the Executive Vice President. The other is Mr. Leo E. Brown, who has held the post since 1961.

ERNEST B. HOWARD, M.D.
Executive Vice President, AMA

Dr. Raymond T. Holden, of Washington, is one of a special committee appointed to study the AMA management survey by Cresap, McCormick and Paget. Dr. Alvin J. Ingram, of Memphis, Tenn., Secretary of the Board of Trustees, is Chairman. The third member of the committee is Dr. Irvin E. Hendryson, of Albuquerque, N. M., Vice Chairman of the Board. The committee will report at the next regular meeting of the Board in May.

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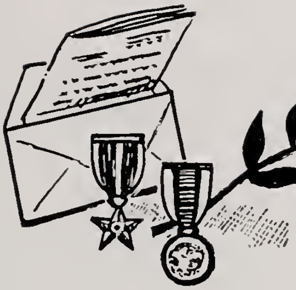

News & Personals

Summary of Executive Board Actions

Proceedings of March 24 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Present were Chairman Paul R. Wilner and Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Thomas M. Arnett, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Dr. Raymond T. Holden was among those present by invitation.

Immediately following dinner Dr. Herbert S. Gates, Chairman of the Society's Traffic Committee, was presented with a Certificate of Appreciation for his many years of service to the Department of Motor Vehicles. The presentation was made by Mr. William Heath, Director of the Department.

The meeting was called to order by Dr. Wilner at 7:25 p.m. The minutes of the February 24, 1969 meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

February	25	Grievance Committee
	25	Liaison Committee with the Clergy
	27	Traffic Committee
	27	Committee on Communicable Diseases
March	3	Finance Committee
	5	Fee Review Committee
	6	Physicians' Placement Committee
	6	Colon and Rectal Cancer Study Committee
	7	Committee on Blood Banks
	10	Committee on Environmental Health
	11	Board of Credentials
	11	Board of Directors, Health Foundation of D. C.
	12	Liaison Committee with Allied Professions
	13	Committee on Smoking and Health
	17	Grievance Committee
	19	Committee on Ruffin and Other Bequest Funds
	19	Committee on Mental Health
	20	Traffic Committee
	21	Committee on Medical Ethics

DR. HERBERT S. GATES (second from left) accepts a Certificate of Appreciation from Mr. William D. Heath, Director of the D. C. Department of Motor Vehicles, for 15 years' service (14 years as Chairman) on the Medical Society's Traffic Committee. Dr. Gates and his committee meet monthly to discuss cases concerned primarily with applicants who have physical or mental impairments which the Health Department turns over to them for recommendation on the issuance of driving permits.

Board of Credentials: On recommendation of the Board of Credentials, 7 applicants were elected to Active membership, 5 to Associate membership, and 2 to Resident-Intern membership. Their names appear on page 278. Approval was given to the following changes in membership status:

Transfers

Active to Associate: Mathias John Coleman, J. Peter Murphy, Allan Z. Schwartzberg, and Joseph T. Sobota

Associate to Resident-Intern: Touraj Shafai

Resident-Intern to Associate: Harry Daniel Tunnell III

Resignations

Special: John J. Leahy

Associate: Lester J. Sawyer

Dr. Robert F. Costello was reinstated to Active membership.

Civilian Tissue Banks: Copies of a letter of March 17, 1969, from Dr. Milton C. Cobey and supporting documentation were distributed at the meeting. Dr. Wilner asked that the members review the material for discussion at the April meeting. It was thought that it would be helpful for Dr. Cobey to appear at the April meeting for a full discussion of his proposal. The Secretary was instructed to make the necessary arrangements.

Liaison Committee with Allied Professions: Upon the recommendation of this committee a motion was made and carried that the District of Columbia Nurses' Association be advised that the Executive Board approves a proposed joint statement to allow vaginal and/or rectal examinations during labor by licensed professional nurses practicing in the District of Columbia, under the circumstances outlined in the statement, and provided that such examinations are approved by the medical staff of each hospital concerned.

Report on Regional Medical Program: The progress report on RMP activities, as submitted by Dr. Arthur E. Wentz, was accepted.

D. C. Zoning Regulations: At this point Mr. Warren E. Magee, the Society's legal counsel, joined the meeting to discuss the D. C. zoning regulation which requires that physicians or dentists having an office in a house or apartment building maintain residence there. He briefly outlined the problem, which could concern approximately 1,000 Society members, and cited 1 case still pending. The Board agreed that our legal counsel should quickly, expeditiously, and at a reasonable expense to the Society, attempt to have the zoning regulation changed. It was also agreed that Mr. Magee should seek audience with the D. C. Commissioners, or even one of them, in an effort to relieve the problem.

Summarily, a motion was made and carried that Mr. Magee be authorized to secure a hearing before the Zoning Board in an effort to change existing zoning regulations, using whatever means he deems necessary and appropriate, and that Mr. Magee ask for the coöperation of the Dental Society, the Medico-Chirurgical Society, and all other related groups having members who might be affected by the regulation.

A second motion was made and carried that a letter of information be sent to the membership advising them of the activities of the Medical Society regarding the zoning regulation, and that it be pointed out that each member cited for violation must file his appeal on an individual basis.

Other Business

1. President Bacon reported briefly on the forthcoming Scientific Assembly, emphasizing that a very good program was shaping up.
2. It was voted to accept the recommendation of the Committee on the Ruffin and Other Bequest Funds to appropriate $700 from the Kober Library Fund for the Society's library.

There being no further business, the meeting was adjourned at 10:00 p.m.

MEETINGS

The American Medical Association will convene for its **118th Annual Convention** in New York City, July 13–17, 1969. Four general scientific sessions are planned on the following topics: Human Sexuality, Physical Fitness and Aging, Impact of Medical Education on Patient Care, and Chronic Pulmonary Insufficiency and Air Pollution Problems. Each of 22 scientific sections will present a program. The 23rd section —on Special Topics—plans 6 sessions. The May 26 issue of *The Journal of the American Medical Association* will list the entire scientific program.

Much of the scientific activity will be in the Coliseum and New York Hilton Hotel. The House of Delegates will meet at the Americana Hotel. It is expected there will be from 250 to 300 scientific exhibits at the Coliseum, including special ones on arthritis, pulmonary function, fresh tissue pathology, fractures, resuscitation, and laboratory medicine. Industrial exhibits also will be on view at the Coliseum. Closed-circuit scientific presentations televised in color will emanate from Cornell University Medical Center.

Montgomery County Heart Association will present its **1969 Cardiac Symposium** at the Washingtonian Motel in Gaithersburg, Md., May 21, from 9:00 a.m. to 4:30 p.m. The theme of the meeting is "Coronary Artery Disease: Prophylactic Management and Special Clinical Aspects." Speakers will be Dr. Robert I. Levy, of the National Heart Institute, Bethesda, Md.; Dr. William P. Castelli, of the National Heart Institute, Framingham, Mass.; Dr. George E. Burch, Tulane University; Dr. Arthur M. Master, Mount Sinai Hospital, New York; Dr. Felix

Wroblewski, Cornell University Medical School, New York; and Dr. Charles K. Friedberg, Mount Sinai School of Medicine.

The Spring Meeting of the Washington Society of Pathologists will be held on Saturday, June 7, in the Dart Auditorium of the Armed Forces Institute of Pathology, beginning at 10:00 a.m. Dr. Lorenz E. Zimmerman, Chief of the Ophthalmic Pathology Branch of AFIP, will present a seminar on "Lesions of Ocular Adnexa." A limited number of slide sets will be available at a cost of $25.00. Sets may be obtained by mailing a check or money order to the Washington Society of Pathologists, Inc., ℅ Dr. Mary J. Matthews, Secretary-Treasurer, 6604 Virginia View Court, Potomac Overlook, Washington, D. C. 20016.

GENERAL NEWS

George Washington University dedicated its 13-story University Clinic, April 27, at Lisner Auditorium. The guest speaker was Dr. John H. Knowles, General Director of the Massachusetts General Hospital, Boston.

The University Clinic, 2150 Pennsylvania Avenue, N.W., houses the office activities of an 88-member academic group practice, comprised of physicians in general medicine and more than 20 specialties. The Clinic also houses Student Health Services for the University.

Chief of Staff of the University Clinic is Dr. James J. Feffer, who is Associate Dean for Clinical Affairs of the Medical Center.

Dr. Calvin T. Klopp has been named Medical Director of the Clinic. A graduate of Harvard Medical School, he interned at Boston City Hospital and took his surgical residency at Memorial Hospital, New York, as a trainee of the National Cancer Institute. For many years he has been Medical Director of the Cancer Clinic, Cancer Coördinator, and Warwick Professor of Surgery (cancer) at George Washington, as well as Chairman of the Cancer Committee of the University Hospital.

Dr. Klopp, Medical Director of new George Washington Clinic

The old outpatient facilities previously located within the University Hospital have been abandoned, releasing much needed hospital space for a greatly expanded Emergency Pavilion and a completely new Heart Station.

Dr. Roque J. Avila, Ambassador to the United States from Paraguay, has taken on additional duties as a faculty member at Georgetown University School of Medicine. A pediatrician, he teaches students in community medicine and international health. Dr. Avila, formerly Director of the General Infectious Hospital in Asuncion, Paraguay, has spent over 20 years combating tropical diseases in various posts with his country's Ministry of Public Health and Welfare. He has his Master's degree from Tulane University and his medical degree from the University of Asuncion.

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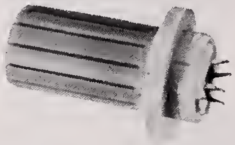

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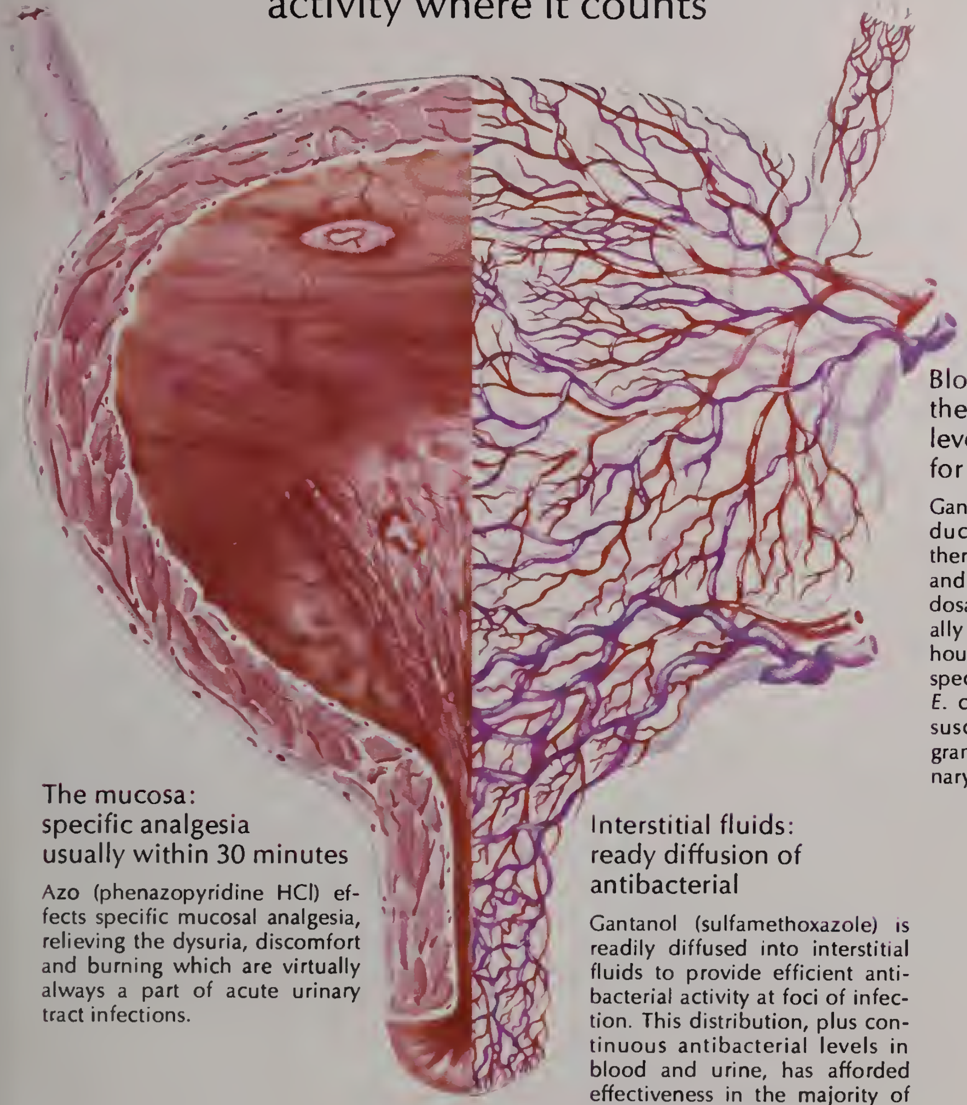

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Contraindicated in sulfonamide-sensitive patients, pregnant females at term, prenature infants, newborn infants during he first three months of life, glomerular nephritis, severe hepatitis, uremia and pyelonephritis of pregnancy with gastrointestinal disturbances.

Warnings: Use only after critical appraisal in patients with liver damage, renal damage, urinary obstruction or blood dyscrasias. If toxic or hypersensitivity reactions or blood dyscrasias occur, discontinue therapy. In intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed.

Precautions: Observe usual sulfonamide therapy precautions including maintenance of an adequate fluid intake. Use with caution in patients with histories of allergies and/or asthma. Patients with impaired renal function should be followed closely since renal impairment may cause excessive drug accumulation. Occasional failures may occur due to resistant microorganisms. Not effective in virus and rickettsial infections.

Adverse Reactions: Headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, Stevens-Johnson syndrome, injection of the conjunctiva and sclera, petechiae, purpura, hematuria or crystalluria may occur, in which case the dosage should be decreased or the drug withdrawn.

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Precautions: Use with caution in moderate hypertension and cardiac decompensation. Cases involving abuse of or dependence on phenmetrazine hydrochloride have been reported. In general, these cases were characterized by excessive consumption of the drug for its central stimulant effect, and have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations or delusions. Do not exceed recommended dosage.

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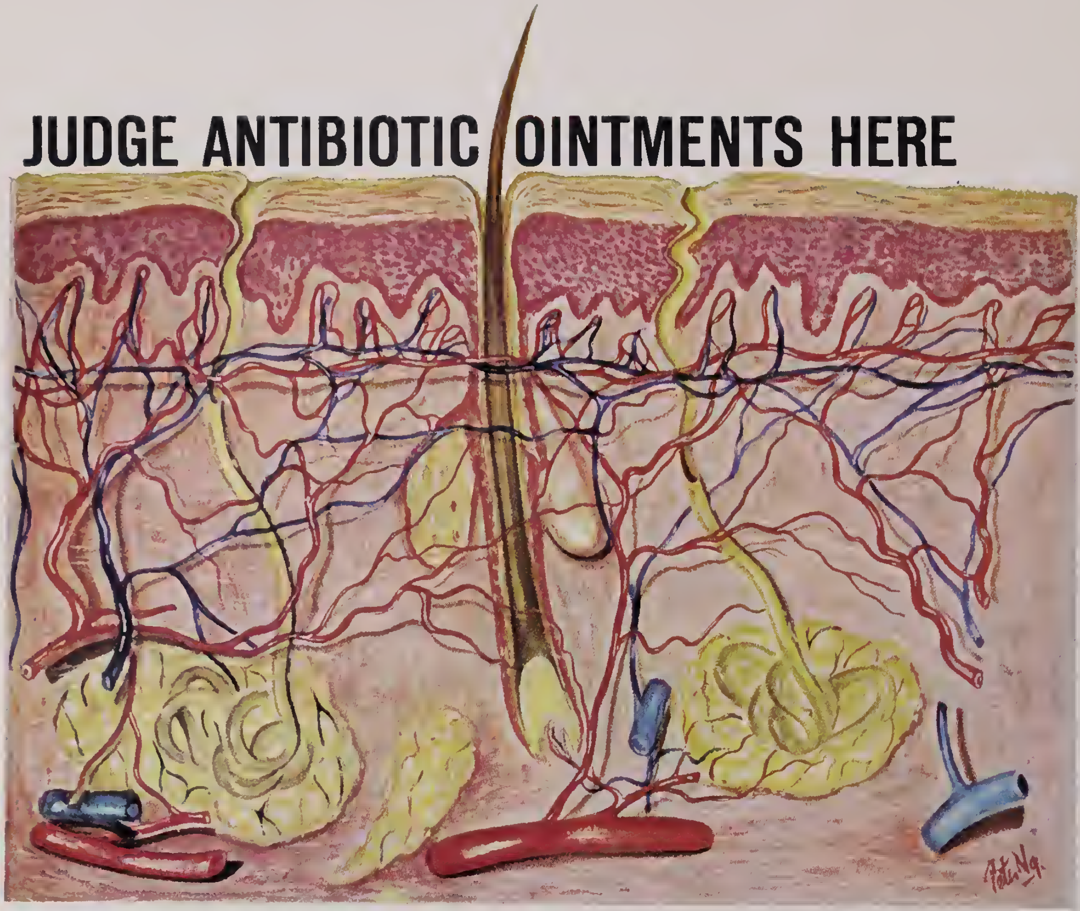

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Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

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The Medical Genetics Section of the Department of Preventive Medicine and Public Health at Creighton University School of Medicine, Omaha, is interested in the study of patients showing an increased incidence of any histological variety of cancer in their families. Of particular interest is the cancer family syndrome, characterized by: (1) increased frequency of adenocarcinoma of all sites, particularly of the colon and endometrium; (2) early age at onset of cancer; (3) increased occurrences of multiple primary malignant neoplasms; and (4) autosomal dominant inheritance.

Physicians with patients known to have a familial cancer background may write to Dr. Henry T. Lynch, Associate Professor and Chairman, Department of Preventive Medicine and Public Health, Creighton University School of Medicine, 657 North 27th Street, Omaha, Nebr. 68131. Studies will include a genealogical and medical investigation of the entire kindred in each case. All information obtained will be shared with family physicians in order to facilitate cancer control.

The National Medical Association Foundation, Inc., of Washington, has begun construction of a $3-million nursing home and comprehensive health care facility at First and K Streets, N.W. The project is expected to be a prototype which may be duplicated in urban centers throughout the country.

The 4-story structure will have a 256-bed nursing home and offer a full range of physician services to private and public-assistance patients. Offices for private physicians will be provided in the building, and the D. C. Health Department will assist in staffing and development of programs. The project director is Dr. M. Alfred Haynes.

Members of NMA provided most of the $300,000 cash equity required for the project. The remaining funds are to be provided through an FHA-guaranteed mortgage made by the Equitable Life Assurance Society as part of the insurance industry's $1-billion commitment toward rehabilitation and revitalization of central city areas.

Vice Admiral George M. Davis, Jr., MC, USN, was appointed by the President to serve a 4-year term as **Surgeon General of the Navy and Chief of the Bureau of Medicine and Surgery.** He assumed the duties of that office on February 1 and was promoted to the rank of Vice Admiral. As the twenty-fifth Surgeon General of the Navy, he succeeds Vice Admiral Robert B. Brown, MC, USN.

A native of Bixby, Oklahoma, Admiral Davis graduated from the University of Oklahoma, Norman, with a Bachelor of Science degree in medicine and received his medical degree in 1939 from the University of Oklahoma School of Medicine at Oklahoma City.

VICE ADMIRAL GEORGE M. DAVIS, MC, USN
Surgeon General of the Navy

Admiral Davis is certified by the American Board of Internal Medicine. He is a Fellow of the American College of Physicians, the American College of Chest Physicians, and the American College of Cardiology. He is also Governor for the Navy of the American College of Cardiology. He has received numerous citations and decorations.

Rear Admiral John W. Albrittain, MC, USN, Commanding Officer of the Naval Hospital, Great Lakes, Ill., has been named **Deputy Surgeon General of the Navy**, succeeding Admiral Davis. Admiral Albrittain is a 1955 graduate of the University of Maryland School of Medicine and a diplomate of the American Board of Dermatology.

The hospital ship **S.S. HOPE** returned to the United States, March 22, after completing a year-long voyage to the island nation of Ceylon, the most comprehensive mission ever undertaken by the ship. The permanent staff of 135 U.S.

medical specialists, supplemented during the course of the voyage by 180 volunteer physicians and dentists, conducted educational exchange programs with more than 1,150 Ceylonese medical and paramedical counterparts on the ship, and in hospitals, schools and clinics throughout the country. Ceylon is the eighth nation visited by the S.S. HOPE.

Project HOPE began a pilot program in health education in Laredo, Texas, in April. This is the first project to be undertaken in the United States by this international health agency. In Laredo HOPE will employ teaching techniques learned abroad to better enable the community to deliver health services. Local personnel will be trained in nursing, including practical and public health nursing, laboratory technology, nutrition education, community health, and other fields.

The Department of Psychiatry of Sibley Memorial Hospital announces the services of the **Groome Child Guidance Clinic** which opened, February 1, under the direction of Dr. Jack O. Bradt. The Clinic is located on the fifth floor of the Lucy Webb Hayes Building on the grounds of Sibley, 5255 Loughboro Road, N.W.

At present the Clinic is limiting itself to children 12 years of age or younger, where financial circumstances prohibit private treatment. The Clinic is open for patients, by appointment, only 2 half-days a week, Monday afternoons and Friday mornings. Telephone intake and referrals are received Monday through Friday, between 9:30 a.m. and 1:30 p.m.

The Washington Psychiatric Society celebrated its **20th anniversary** with a dinner meeting at the Mayflower Hotel, March 28. As customary, the principal address was made by the President of the American Psychiatric Association, this year Dr. Lawrence C. Kolb, Director of the New York State Psychiatric Institute and Chairman of the Department of Psychiatry at the College of Physicians and Surgeons, Columbia University. He spoke on "Perspectives—American Psychiatry, 1969."

At the business meeting the following officers were elected:

Dr. W. Deaver Kehne, *President-elect*; Dr. Robert B. Neu, *Secretary*; Dr. Edward I. Kushner, *Treasurer*; Dr. Paul D. Sullivan, *Delegate to the APA Assembly*; and Dr. Louis F. Rittelmeyer, Jr., *Alternate Delegate to the APA Assembly.*

The 1969–70 President of the Society is Dr. John E. Nardini, who served as President-elect during the past year.

A new **Suburban Maryland Chapter of the Washington Psychiatric Society** had its charter meeting on March 20 at the Bethesda Naval Medical Center. The following officers, all of Bethesda, Md., were elected:

Dr. Henry P. Laughlin, *Chairman*; Dr. Brian Crowley, *Vice Chairman*; and Dr. Kenneth R. Gaarder, *Secretary-Treasurer.*

Meeting quarterly, with a membership of about 60, the Chapter is open to psychiatrists who live or practice in Montgomery and Prince Georges Counties, Maryland.

The March 1969 issue of ***The Reporter* of Medical Service of D. C.** carried a message from the Chairman of the Board, Dr. Leonard T. Peterson, calling attention to the fact that Medical Service has completed 20 years of service to the people of the Washington, D. C. area. As 1968 ended, Medical Service was providing protection for 1,191,047 participants. Benefits paid during 1968 amounted to nearly $44,000,000, or over 3 times the 1960 total. As Washington, D. C. area carrier for the Part B supplementary medical portion of Medicare, Medical Service disbursed $12,396,000 for claims of Medicare beneficiaries during the year. At present there are more than 3,400 Participating Physicians in the Medical Service Plan.

PERSONALS

At the meeting of the Georgetown Clinical Society at Georgetown University, March 19, **Dr. Charles A. Millwater,** one of the "Old Timers," was honored as Man-of-the-Year for his teaching services in pediatrics at Georgetown University School of Medicine.

Each year the Clinical Society honors one of its "Old Timers," always a graduate of Georgetown School of Medicine and an active member of the Clinical Society for 10 years. Dr. Joseph W. Peabody, Jr., presented the award to Dr. Millwater.

Presiding at the meeting was Dr. James J. Foster, President of the Clinical Society. The reception at Georgetown was co-hosted by Father Edwin Quain, Acting President of Georgetown

University, and Dr. John C. Rose, Dean of the Medical School.

Dr. William A. Howard was elected Vice President of the American Academy of Allergy at its 25th Annual Meeting in Bal Harbour, Fla., March 18. Dr. Howard is State Chairman for the District of Columbia and Chairman of the Sub-board of Pediatric Allergy for the American Board of Pediatrics. He is senior attending pediatrician, Chief of the Allergy Division, and Chairman of the Medical Staff at Children's Hospital of D. C. He is also Clinical Professor and Chairman of the Department of Pediatrics at George Washington University School of Medicine.

Dr. Roy T. Lester, Director of the Washington Office of the American Medical Association for 10 years, has opened his own firm, Medical Administrative Consultants, in Ormond Beach, Fla. Dr. Lester was Medical Director of Blue Cross-Blue Shield of Texas for 5 years before coming to Washington. His firm will specialize in investigation, research, reporting, and advising on problems that may confront state and local medical societies, health insurance carriers, private physicians, and related organizations.

Dr. John W. Latimer, Jr., has been named Chairman of the D. C. Red Cross Chapter's Disaster, Medical and Nursing Committees. A graduate of George Washington University School of Medicine, he is Associate Clinical Professor on the University faculty. Dr. Latimer has served as a member of the Committee on Emergency Medical Service of the D. C. Medical Society since 1951 and was Chairman of the Committee from 1963 through 1968. He has been active in the Washington Heart Association since 1948 and was its President in 1961 and 1962.

Dr. Jack J. Rheingold, consultant in hematology to Walter Reed General Hospital, received the Outstanding Civilian Service Medical and the Certificate of Achievement from Brigadier General Frederic J. Hughes, Jr., Commander of Walter Reed Hospital, December 19, 1968. Dr. Rheingold is President of the Medical Board of the Washington Hospital Center.

Dr. Burke Syphax was recently elected to the Board of Directors of the D. C. Health Facilities Planning Council. A graduate of Howard

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University College of Medicine, he is Chairman of its Department of Surgery.

Dr. Alan L. Pinkerson has been appointed Senior Professional Staff Member, Myocardial Infarction Branch of the National Heart Institute. His primary area of responsibility will be to assist in analyzing, planning, and monitoring medical aspects of the program. Concurrent with his present position he serves as lecturer in the Department of Physiology and Biophysics and as instructor in the Department of Medicine at Georgetown University School of Medicine. For the past 2 years he has practiced as internist and cardiologist with Group Health Association, Inc. in Washington, D. C.

Dr. Leon Gerber, General Chairman of the United Jewish Appeal, was awarded the Jacobi Merit Award of the Jacobi Medical Society, February 8. This award is presented to a member for outstanding service to the profession and the community. Dr. Gerber is Associate Clinical Professor of Surgery at George Washington University School of Medicine and a senior attending surgeon at the Washington Hospital Center and Children's Hospital.

OBITUARIES

Jack Masur, M.D.

(1908–1969)

Dr. Jack Masur, Assistant Surgeon General of the U. S. Public Health Service, died, March 8, 1969 at his home, 3710 Davenport Street, N.W. He had been with the Public Health Service since 1943 and was Associate Director for clinical care administration of the National Institutes of Health and Director of its Clinical Center. Before joining NIH he was Chief of the Public Health Service's Bureau of Medical Services, from 1951 to 1956, and administered PHS hospitals, Indian health programs, the Hill-Burton program, foreign quarantine, and other medical activities.

Dr. Masur was born in Augusta, Ga., June 16, 1908. He grew up in New York City and received his premedical training at New York University. After earning his medical degree from Cornell University, he interned at Bellevue Hospital.

In 1962 Dr. Masur became the first government official and first physician to head the American Hospital Association. He also served 9 terms on the Joint Commission on Accreditation of Hospitals.

A diplomate of the American Board of Preventive Medicine and Public Health, he was a Fellow of the American Public Health Association and the American College of Physicians and a member of many other professional organizations. He received the Public Health Service Distinguished Service Medal in 1965 and the Founders Award of the Association of Military Surgeons in 1968.

He leaves his wife, Mrs. Barbara Forsch Masur; a son, Henry Masur, a medical student at Cornell University; and 3 daughters, Nancy and Corinne, at home, and Jenny, a student at Mt. Holyoke College. He also leaves a brother, Louis Masur, of Augusta, and 2 sisters, Mrs. Ida Mahler, of New York City, and Mrs. Mary Brand, of Woodmere, N. Y.

Lee McCarthy, M.D.

(1892–1969)

Dr. Lee McCarthy, a Life member of the Medical Society of the District of Columbia, died, March 16, 1969 at Doctors Hospital. He retired 10 years ago after practicing in the District of Columbia since 1925.

Dr. McCarthy was born in Princeton, New Jersey, June 12, 1892. He received his B.S. degree from Princeton University in 1912 and his medical degree from Johns Hopkins University in 1916. He interned the following year at Johns Hopkins Hospital. A few years later he studied abroad at the University of Berlin and at the Sorbonne in Paris. His practice was limited to dermatology and syphilology.

During World War I he served in the Medical Corps of the U.S. Navy for 5½ years, and he served for 4 years in the U.S. Naval Reserve during World War II. He left the service with the commission of Captain.

Dr. McCarthy had served on the faculty of Georgetown University as Clinical Professor of Dermatology.

He was the author of 2 texts, "Histopathology of Skin Diseases" and "Diagnosis and Treatment of Diseases of the Hair." He had also contributed a number of articles to the literature.

Dr. McCarthy was elected to Active membership in the Medical Society of the District of Columbia in 1926 and became a Life member in 1965. He was a diplomate of the American Board of Dermatology and Syphilology and a member of the American Medical Association, the American

Dermatological Association, the French Dermatological Society of Paris, an honorary member of the German Dermatological Society, and a member and Past President of both the Clinico-Pathological Society and the International Medical Club of Washington. He also belonged to the Chevy Chase Club.

Surviving him is his wife, Mrs. Germaine McCarthy, of the home address, 3001 Veazey Terrace, N.W.

Lester Neuman, M.D.

(1888–1969)

Dr. Lester Neuman, clinical pathologist, died, March 25, 1969 at Doctors Hospital. Retired since 1953, he resided at 2737 Devonshire Place, N.W.

Dr. Neuman, a Washingtonian, was born, October 24, 1888. He attended the public schools of Washington, and from Georgetown University he received his medical degree in 1913 and, 2 years later, his Bachelor of Science degree. After interning at Georgetown Hospital for a year, he went abroad to study pathology at the University of Vienna. Many years later he enrolled for postgraduate study of hematology at Harvard University.

During World War I he served as First Lieutenant in the Medical Corps of the U.S. Army.

From 1916 to 1937 he was on the staff of Georgetown University School of Medicine as Associate Professor of Pathology. He was pathologist for a number of years at Georgetown, Providence, and old Emergency Hospitals and at Glenn Dale Sanitarium. He had been associate pathologist at Doctors Hospital.

Dr. Neuman was elected an Active member of the Medical Society of the District of Columbia in 1915 and became a Life member in 1955. He was a diplomate of the American Board of Pathology, a Fellow of the American College of Physicians and the College of American Pathologists, and a member of the American Medical Association, the American Society of Clinical Pathologists, the American Society for the Study of Neoplastic Diseases, the Georgetown Clinical Society, the Jacobi Medical Society, and the International Medical Club. He was the author of a number of scientific articles.

Surviving him are his wife, Mrs. Janet Nusbaum Neuman; a son, Robert B. Neuman, of Washington; and a daughter, Dr. Alice Bessman, of Los Angeles, California.

Arthur Francis Passarelli, M.D.

(1911–1969)

Dr. Arthur F. Passarelli, Washington surgeon, died, March 27, 1969 at Providence Hospital. He resided at 5806 Sargent Road, Chillum, Md.

Dr. Passarelli was born in Youngstown, Ohio, May 26, 1911. He came to Georgetown University for premedical and medical study and received his Bachelor of Science degree in 1933 and his medical degree in 1938. He interned at Providence Hospital, Detroit, the following year and continued training in pathology, gynecology and surgery at Parkland Memorial Hospital, Dallas, and Woman's Hospital, Detroit.

In 1941 he joined the U.S. Army Medical Corps and served with the Third Army in Europe. He was discharged in 1946 with the rank of Lieutenant Colonel.

Following the War he came to Providence Hospital in Washington for a residency in surgery and served on the active staff of Providence until his death.

Dr. Passarelli was elected an Active member of the Medical Society of the District of Columbia in 1950. He was a Fellow of the American College of Surgeons and a member of the American Medical Association, the American Academy of Abdominal Surgeons, and the Washington Academy of Surgery.

He leaves a son, Arthur Francis Passarelli, Jr., of Chillum, Md.; a brother, Dr. William E. Passarelli, of Chicago; and a sister, Miss Merrian R. Passarelli, also of Chicago.

John Joseph Mulligan, M.D.

(1928–1969)

Dr. John J. Mulligan, Hyattsville, Md. surgeon, died, April 1, 1969 at Providence Hospital. He lived at 12402 Cedarbrook Lane, Laurel, Md.

Born in Wilkes Barre, Penna., June 11, 1928, Dr. Mulligan received his B.A. degree from New York University in 1953 and his medical degree from New York State College of Medicine in New York City in 1957. He interned for a year at New Britain General Hospital, New Britain, Conn., and served a 4-year residency in surgery at Providence Hospital, Washington.

Dr. Mulligan was in private practice in New Carrollton, Md., for 5 years. He was on the surgical staff of Providence for 5 years as well as on the

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staff of Prince Georges Hospital. He worked with Gonzaga College High School Recreation Department, serving as the doctor for the football team. At Georgetown University School of Medicine he was Clinical Instructor in Surgery.

He was elected an Active member of the Medical Society of the District of Columbia in 1962 and transferred to Associate membership in 1963.

Besides his wife, Mrs. Joan A. Mulligan, he leaves 3 daughters, Diane, Joan and Beth, and 4 sons, John, Kevin, James and Robert. His mother, Mrs. Joseph P. Mulligan, of West Hempstead, Long Island, N. Y., also survives him.

Congenital Segmental Lobar Emphysema—
Janovski et al

(Continued from page 254)

idiopathic in nature. An additional 2 cases have been presented. Both cases are characterized by congenital deformity due to hypoplasia and/or agenesis of bronchial cartilage, respectively. The cartilaginous defects appear to be the direct cause of the emphysema.

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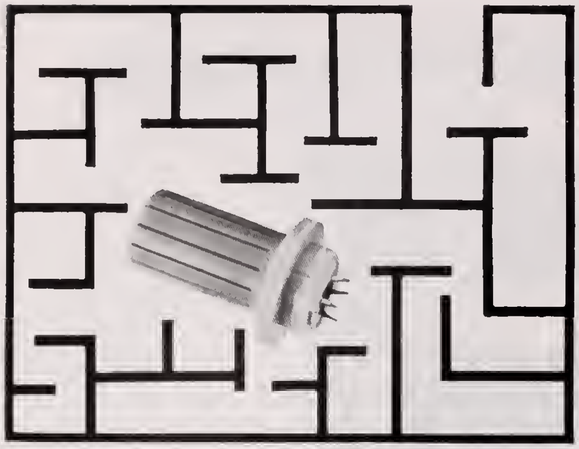

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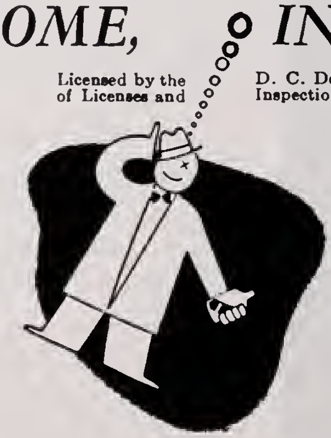

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May 24–26: American Thoracic Society. Fontainebleau Hotel, Miami Beach, Fla. Address: Dr. Robert J. Anderson, Medical Director, 1740 Broadway, New York, N.Y. 10019.

May 26–28: American Ophthalmological Society. The Homestead, Hot Springs, Va. Address, Dr. Samuel D. McPherson, Jr., Secretary-Treasurer, 1110 West Main Street, Durham, N. C. 27701.

June 2: International Conference on Drug Abuse. Americana Hotel, New York. Address: Secretariat, International Association for Accident and Traffic Medicine, 520 First Ave., New York, N.Y. 10016.

June 3–4: International Conference on Poison Control. Americana Hotel, New York. Address: Secretariat, International Association for Accident and Traffic Medicine, 520 First Ave., New York, N.Y. 10016.

June 15–18: American Institute of Homeopathy. Sheraton-Park Hotel, Washington. Address: Miss Kay Vargo, Executive Secretary, 2726 Quebec Street, N.W., Washington, D. C. 20008.

June 16–19: American Proctologic Society. Statler-Hilton Hotel, Boston. Address: Dr. John E. Ray, Secretary, 320 West Lafayette Street, Detroit, Mich. 48226.

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June 19–21: American Medical Women's Association. Alta Mira Hotel, Sausalito, Calif. Address: Mrs. Gertrude F. Conroy, Executive Secretary, 1740 Broadway, New York, N.Y. 10019.

June 23–26: American Orthopaedic Association. The Homestead, Hot Springs, Va. Address: Dr. Albert B. Ferguson, Secretary, 125 DeSoto Street, Pittsburgh, Pa. 15213.

June 28–29: American Diabetes Association. Hotel Roosevelt, New York. Address: Mr. J. Richard Connelly, Executive Director, 18 East 48th Street, New York, N. Y. 10017.

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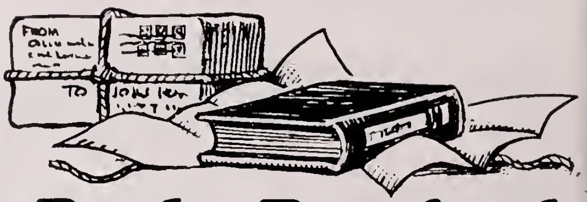

Books Received

Cooking for Your Celiac Child: Dietary Management in Malabsorption Disorders. CHARLOTTE BAUM SHEEDY AND NORMAN KEIFETZ. Price, $5.95. Pp. 244. New York: Dial Press, 1969.

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The Ophthalmic Assistant: Fundamentals and Clinical Practice. HAROLD A. STEIN, M.D., M.Sc. (Ophth.), F.R.C.S. (C), AND BERNARD J. SLATT, M.D., F.R.C.S. (C). Price, $19.50. Pp. 406, with 550 illustrations. St. Louis: Mosby, 1968.

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Comprehensive Review for the Radiologic Technologist. MATTHEW STEVENS, R.T., AND ROBERT I. PHILLIPS, R.T., FASRT. Price, $7.25. Pp. 181, with 13 illustrations. St. Louis: Mosby, 1968.

Communicable and Infectious Diseases: Diagnosis, Prevention, Treatment, 6th ed. FRANKLIN H. TOP, SR., A.B., M.D., M.P.H., F.A.C.P., F.A.A.P., F.A.P.H.A., and 35 collaborators. Price, $28.50. Pp. 755, with 135 illustrations and 15 color plates. St. Louis: Mosby, 1968.

Handbook of Pediatric Medical Emergencies, 4th ed. CHARLES VARGA, M.D. Price, $19.75. Pp. 694, with 120 illustrations. St. Louis: Mosby, 1968.

Paediatric Cardiology. Edited by HAMISH WATSON, T.D., M.D. (Ed.), F.R.C.P. (Ed.), M.R.C.P. (Lond.). Price, $36.50. Pp. 996, illustrated. St. Louis: Mosby, 1968.

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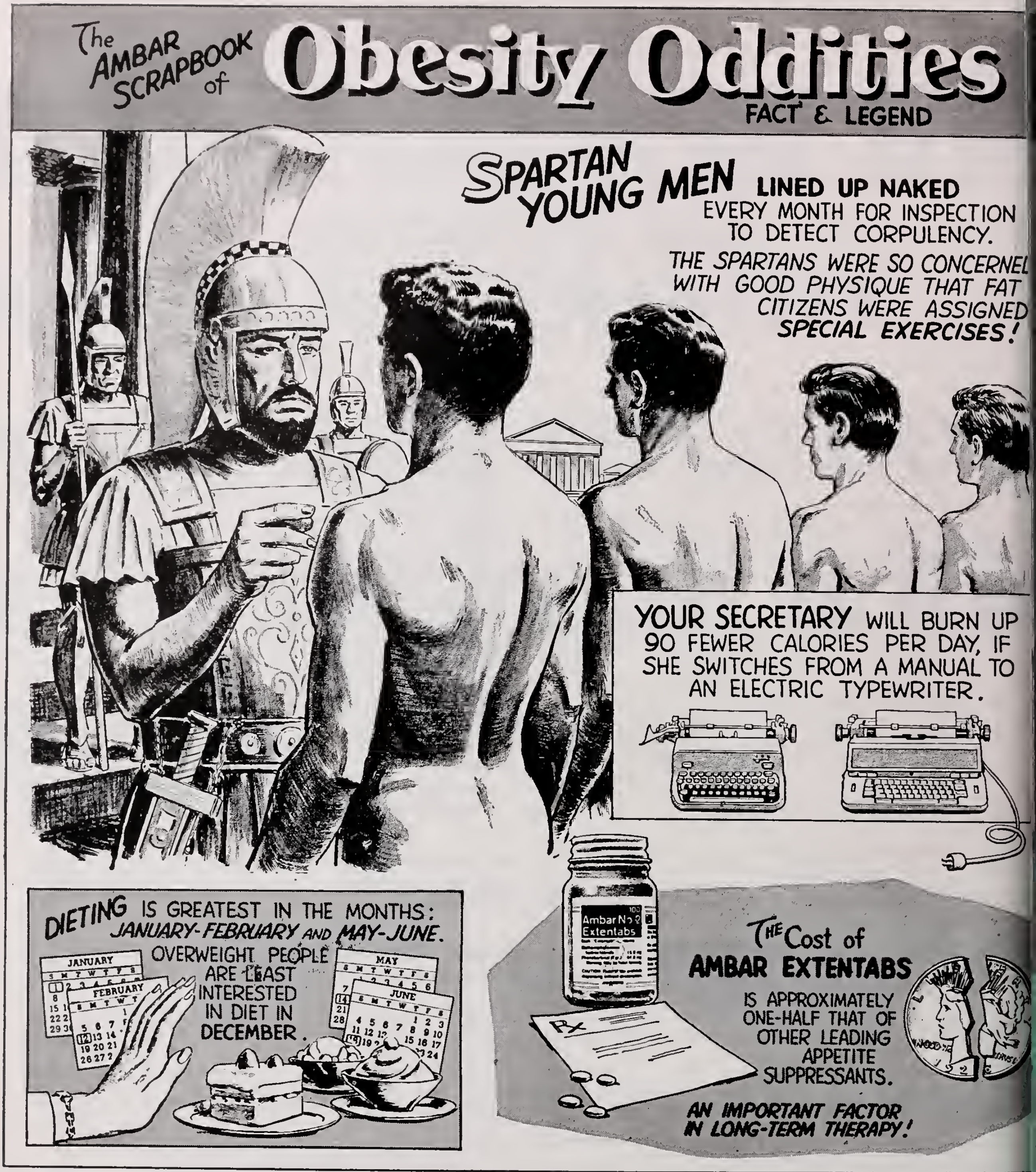
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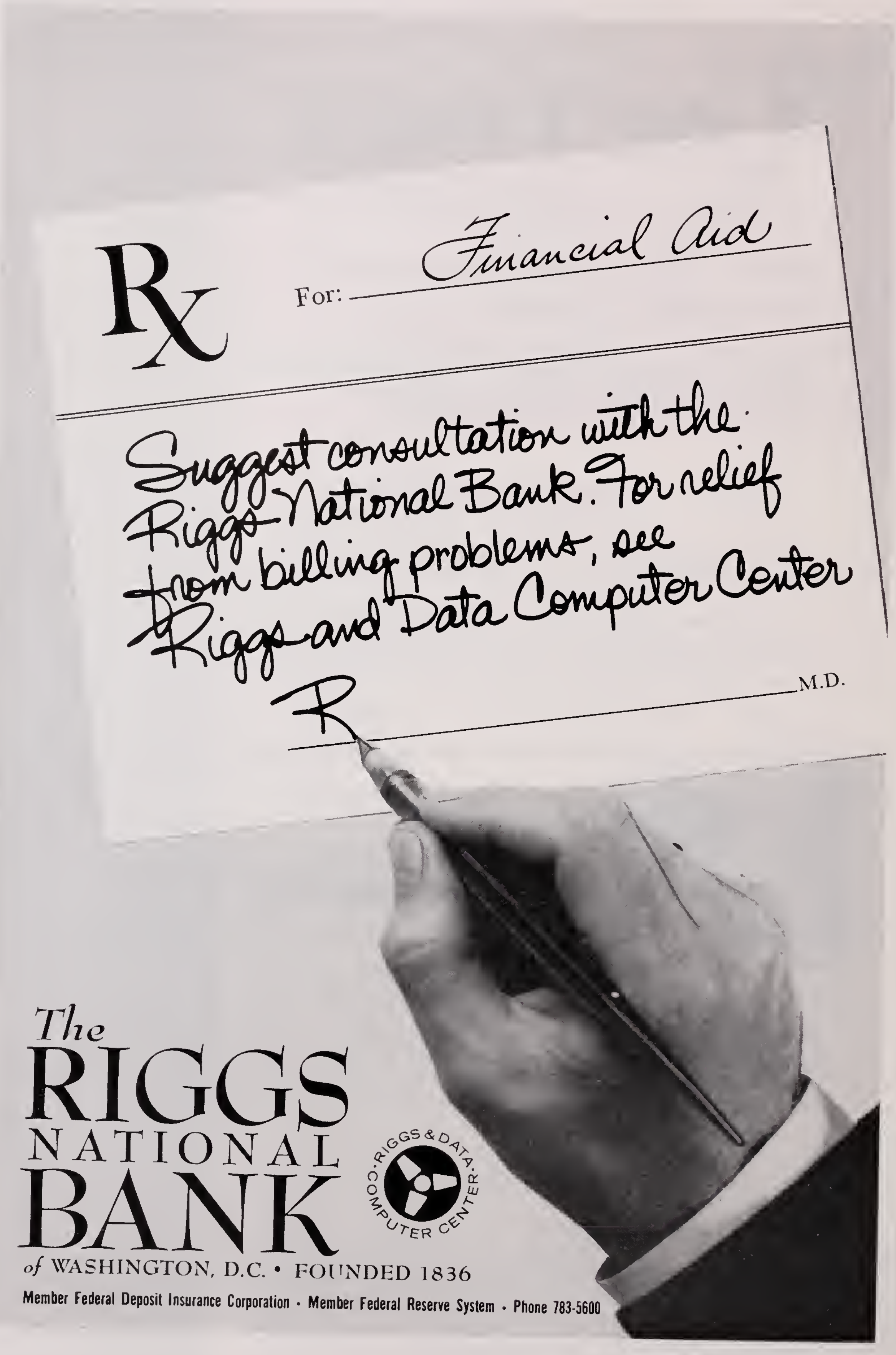
1) Siver, R. H.: CMD, *21*:109, September 1954. (2) Frykman, H. H.: Minn. Med., 8:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., *51*:16-18, January 955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., *15*:15-16, October 1965. 5) Weekes, D. J.: N.Y. State Jour. Med., *58*:2672-2673, August 1958. (6) Weekes, . J.: EENT Digest, *25*:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., nes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: ral Surg., Oral Med. & Oral Path., *20*:591-593, November 1965.



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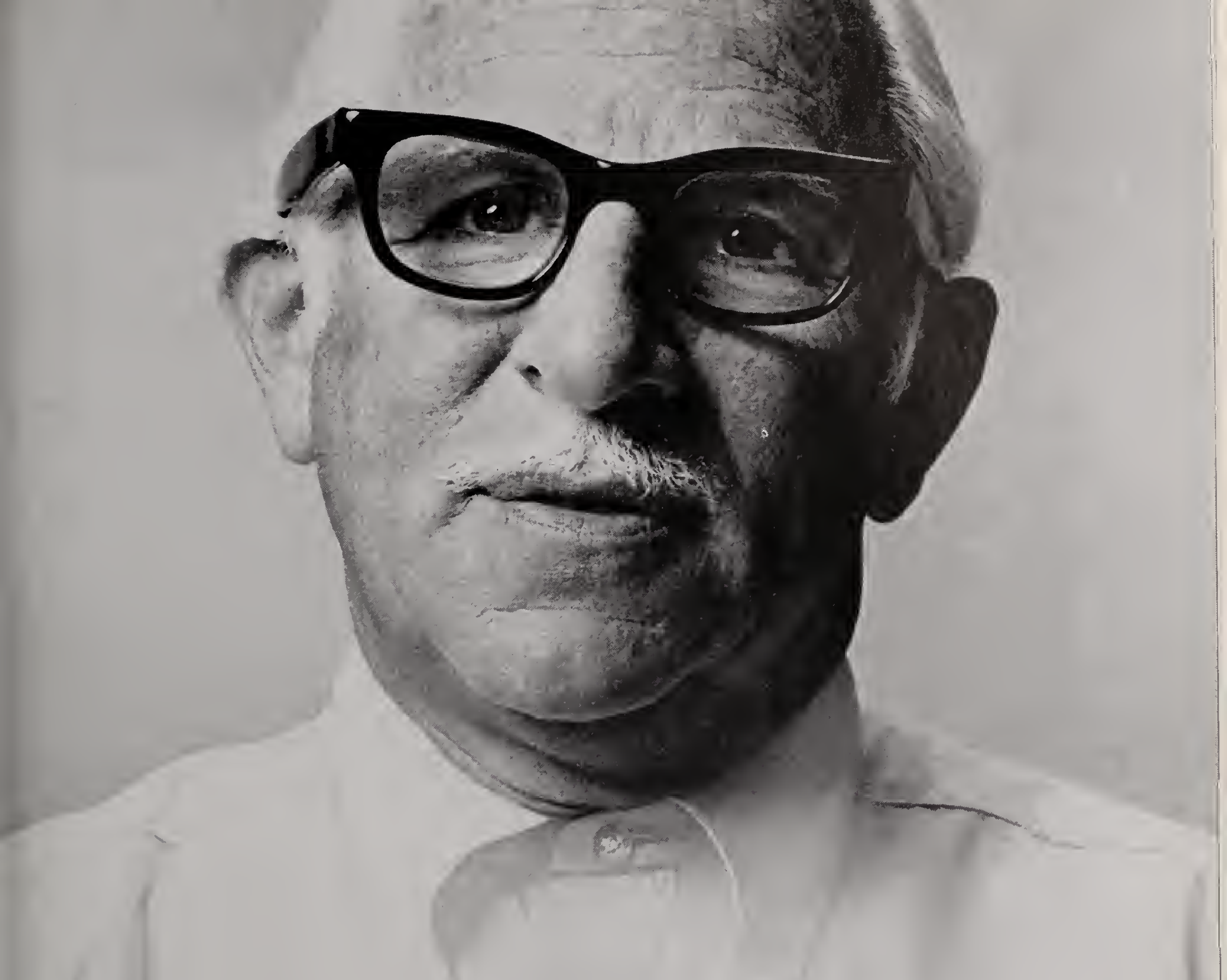

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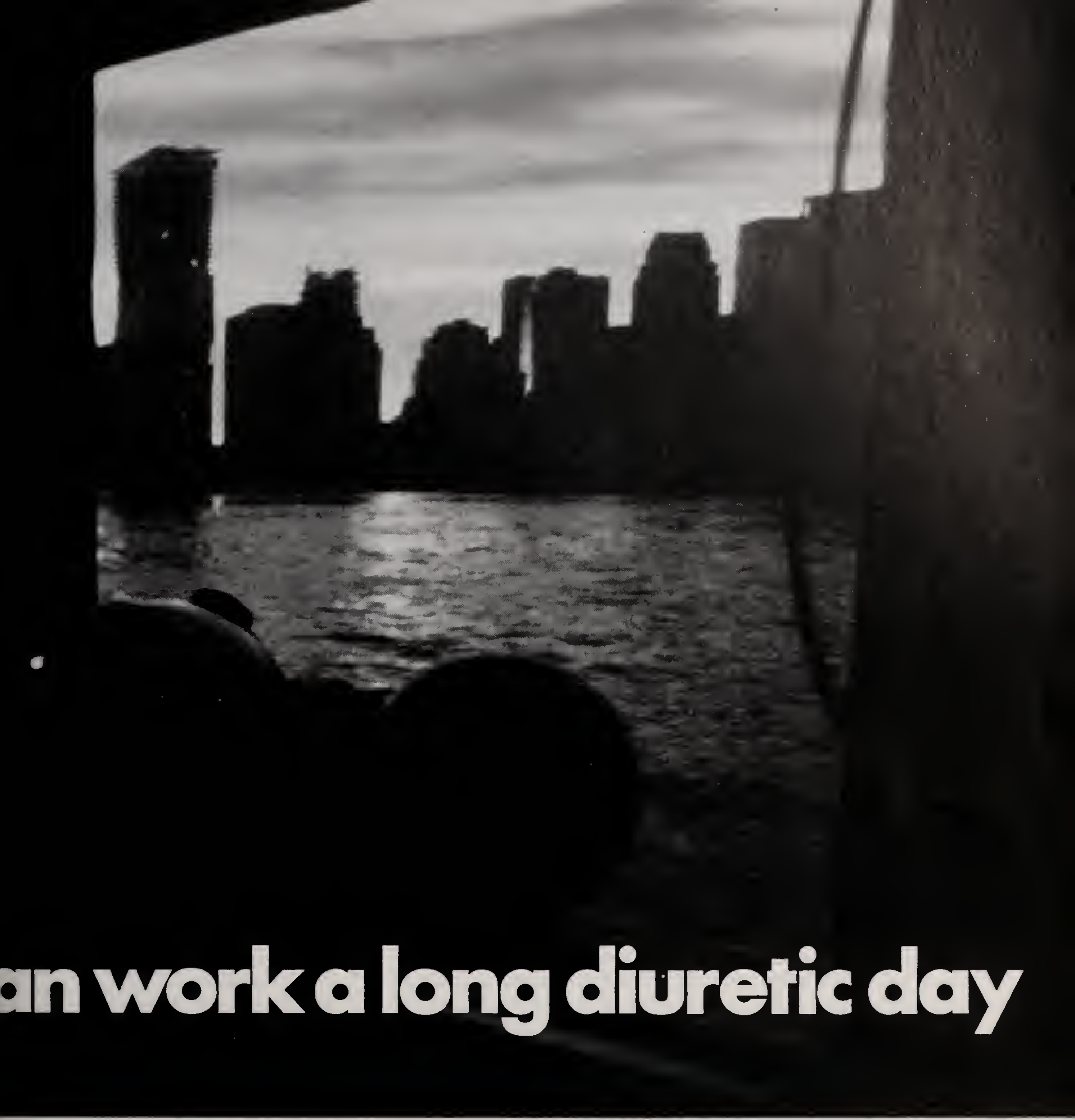

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Book Reviews

Surgical Pathology, 4th ed. Lauren V. Ackerman, M.D., in collaboration with Harvey Butcher, Jr., M.D. Price, $27.50. Pp. 1140, with 1268 figures. St. Louis: Mosby, 1968.

The fourth edition, while possibly a bit premature, continues the general excellence of previous editions of this treatise on surgical pathology. The format remains the same as before, with an introduction to the methodology and philosophy of surgical pathology, a revised chapter dealing with the relationship of ultrastructure to diagnosis, and then a discussion of the pathologic entities encountered by the surgeon and pathologist in each organ system of the body. The photographs, so important in a text of this type, are of high quality and are well chosen to illustrate the descriptive material.

As in previous editions, this book suffers from the enormity of the material it attempts to discuss. Many entities are briefly described or just mentioned in a list of conditions that can be found in a given organ. For the practicing pathologist or surgeon, this is a drawback, but for general students of medicine it represents no great disadvantage. The bibliography has been updated but is essentially the same as in the previous edition.

Comparing this edition with the last, I cannot help wondering why the hurry in publishing the new revision. Except in certain areas, the 2 editions are essentially identical both in descriptive material and photographs. However, the section on skin tumors has been extensively revised and brought up to date; there is new material on renal biopsy findings; and the chapter on ophthalmic pathology has been rewritten and is excellent. Other new material includes the relationship between asbestos and malignancy and the recently described lesion of verrucous carcinoma of the larynx.

If an overview of the field of surgical pathology is desired, this book serves that purpose admirably. However, if specific details of an entity are desired, then one must be ready to look for that particular subject in less encyclopedic texts. The subject of surgical pathology has become too vast to expect a single text to answer everyone's needs.

Richard L. Levin, M.D.

Clinical Methods in Uveitis. The Fourth Sloan Symposium on Uveitis. Edited by Samuel B. Aronson, M.D., Charles N. Gamble, M.D., Ernest K. Goodner, M.D., and G. Richard O'Connor, M.D. Price, $18.25. Pp. 248, with 66 illustrations. St. Louis: Mosby, 1968.

The subject of uveitis is confusing to many, and this is partly due to the fact that the disease is baffling even to the experts.

The participants in this Fourth Sloan Symposium on Uveitis, held in October 1967, fall into 2 groups, one an eminent group of physicians from this country and Europe and the other a group of medical statisticians.

As Dr. Maummenee points out, the best method to establish the etiology of a disease is to isolate an organism from a clinical lesion, or at least to establish a close correlation between a systemic disease and a specific ocular lesion. However, in uveitis this can seldom be done, and a different approach must be used, namely, to group morphologically similar lesions and attempt to statistically determine possible pathogenesis. Such statistical methods can be made more easily now that computers are available. Dr. Perkins described a series of cases which were analyzed on a simple digital computer in England, and Dr. Schlagel described a more sophisticated instrument in his Indiana survey.

There was also a general consensus that our present classification of uveitis into anterior and posterior, or granulomatous and nongranulomatous, is inadequate, and a more precise morphological description of lesions must be adopted.

A strong plea was made that in view of the great shortage of internists with ophthalmological training, even in the large research centers, the general medical evaluation of a patient with uveitis should be ordered, or at least closely supervised by the ophthalmologist, and not turned over to the internist completely.

There were several articles of less interest to the clinician than the researcher, such as those on autoimmunity to basement membrane antigens, the Auer reaction, and on biostatistics, which illustrate some of the many approaches used in investigating uveitis. Also there were 27 pages on fluorescein angiography in intraocular inflammation for those interested in this diagnostic approach.

Admittedly, very little in this book will be new for the up-to-date ophthalmologist, but reading the articles will allow each of us to better evaluate our present theories on uveitis—why, for instance, the evidence for a toxoplasmosis lesion is much greater than for a histoplasmosis infection. In addition, the reader will become aware of the direction current clinical research is taking, which may or may not help explain this elusive disease.

The book is well worth reading.

Bernard Ehrlich, M.D.

(Continued on page 14)

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Book Reviews

(*Continued from page 12*)

Todd-Sanford Clinical Diagnosis by Laboratory Methods, 14th ed. Edited by Israel Davidsohn, M.D., F.A.C.P., and John Bernard Henry, M.D. Price, $24.00. Pp. 1308, with 698 illustrations. Philadelphia: Saunders, 1969.

The 14th edition of Todd-Sanford's "Clinical Diagnosis by Laboratory Methods" is truly an epic of clinical pathology, worthy of the editors. This edition has 32 chapters and 1,308 pages. A comparison with the 13th edition shows new chapters have been added, such as cytogenetics, tests of renal function, spectrophotometric measurements, and the examination of amniotic fluid. Some new chapters have also been added by separating endocrine measurements from chemistry and helminthology from microbiology. The classic subject matter of laboratory medicine, such as hematology, chemistry and immunohematology, has been brought up to include present concepts.

The book will appeal to students of medicine and technology, and it offers a timely reference to the busy pathologist. The clarity of the text and the orderly presentation of the subject matter by various authors will provide the laboratory a much-needed reference on methodology and interpretations.

If this appears to be an enthusiastic review, it certainly was meant to be.

Vernon E. Martens, M.D.

Cystic Fibrosis. Ciba Foundation Study Group No. 32. Edited by Ruth Porter and Maeve O'Connor. Price, $3.95. Pp. 150, with 36 illustrations. Boston: Little, 1968.

This booklet containing 150 pages is the product of a Conference on Control Mechanism in Cystic Fibrosis, held November 29 and 30, 1967, in which 11 clinicians and research workers from England, United States, Scandinavia, Holland and Israel participated.

The leading topic was physiology and pharmacology of the exocrine glands and membrane activity. The current views on pathogenesis of cystic fibrosis were reviewed by Barbero, and new factors were implicated, such as increased calcium level in C/F saliva, disturbance of water and ion flow, and postulation that a circulating substance plays a role in changing the secretory product. Emmelin emphasized the complexity and difficulties in describing the nervous control of salivary glands. The control of the secretory cells, apparently mainly by parasympathetic secretory nerves, was reviewed. The author pointed out the danger of extrapolating human relationships from experimentation since considerable species differences exist.

Chernick presented some very interesting pharmacologic aspects of C/F submaxillary gland secretion. Of particular interest was the observed effect of guanethidine in reversing the turbidity of C/F secretions and the apparent independent relationship of the organic constituents from the ionic constituents. The author discussed the calcium changes and turbidity properties of C/F secretions. Disturbances in the pattern of bronchial secretions were ably presented by L. Reid. The idea of an overall control and local differences was entertained but not fully explained. Slegers from Holland presented ionic secretion by epithelial membranes, including effect of stimulation and the secretory process as seen in the footpad of the cat. He summarized the available information in a proposed scheme of the secretory process.

Herman and Edelman from California reviewed the evidence that aldosterone stimulates transepithelial sodium transport and suggested that mineral-corticoid-specific-receptors are present in target tissues. Philpott from Houston discussed with electron microscopy the functional implication of the cell surface and pointed out that "an increased surface area is a hallmark of cells functionally specialized for electrolyte transport, and that carbohydrate-rich substances are associated with the amplified surface."

The role of kinin-forming enzyme (kallikrein) in exocrine glands was brought into the picture by G. P. Lewis underlining its action as a primary mediator of functional hyperemia in exocrine glands. He concluded that "interference with the vascular control in exocrine glands, through an alteration in the kinin-forming system, might well play a part in the onset or the development of cystic fibrosis."

This conference brought under critical review many recent observations concerning the nature of the basic defect in C/F. Chairman Dornhorst concluded that the 4 glandular systems were considered. In the pancreas the data presented indicated failure of the water and electrolyte secretion provoked by secretion and the pancreas may simply have insufficient diluting secretion to keep it going. In the salivary glands the flow rates are not low, but there is an excess of the organic constituents particularly of calcium. In sweat glands there may be an inhibition of sodium and chloride reabsorption. The abnormal bronchial secretions may originate in the failure of the serous phase. The Chairman underlined the great difficulty in fitting all this information together and ended by conceiving the possibility that some abnormal substance is present which influences these other aspects through its action on calcium, adding, however, that there are still a great many gaps to be filled in.

An invaluable aspect of the booklet is the discussion following each chapter which allows the reader to evaluate more critically the concepts and status of the problems in C/F. This booklet represents a valuable supplement to the 1961 CIBA Foundation Symposium on "Normal and Abnormal Function of the Exocrine Pancreas." It may be regarded also as a useful companion to the 1964 "Research on Pathogenesis of Cystic Fibrosis" (P. A. Di Sant'Agnese, Editor) and the 1967 "Cystic Fibrosis" (Proceedings of the Fourth International Conference, Geigy Symposium, 1966).

Leslie Costello, Ph.D.
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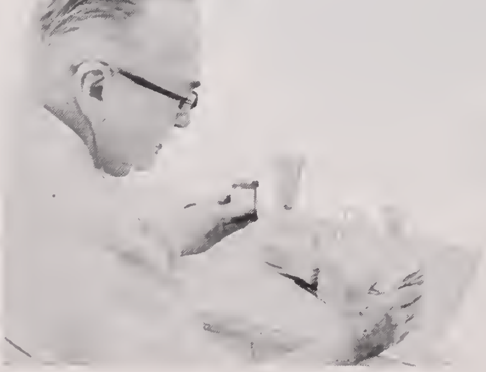

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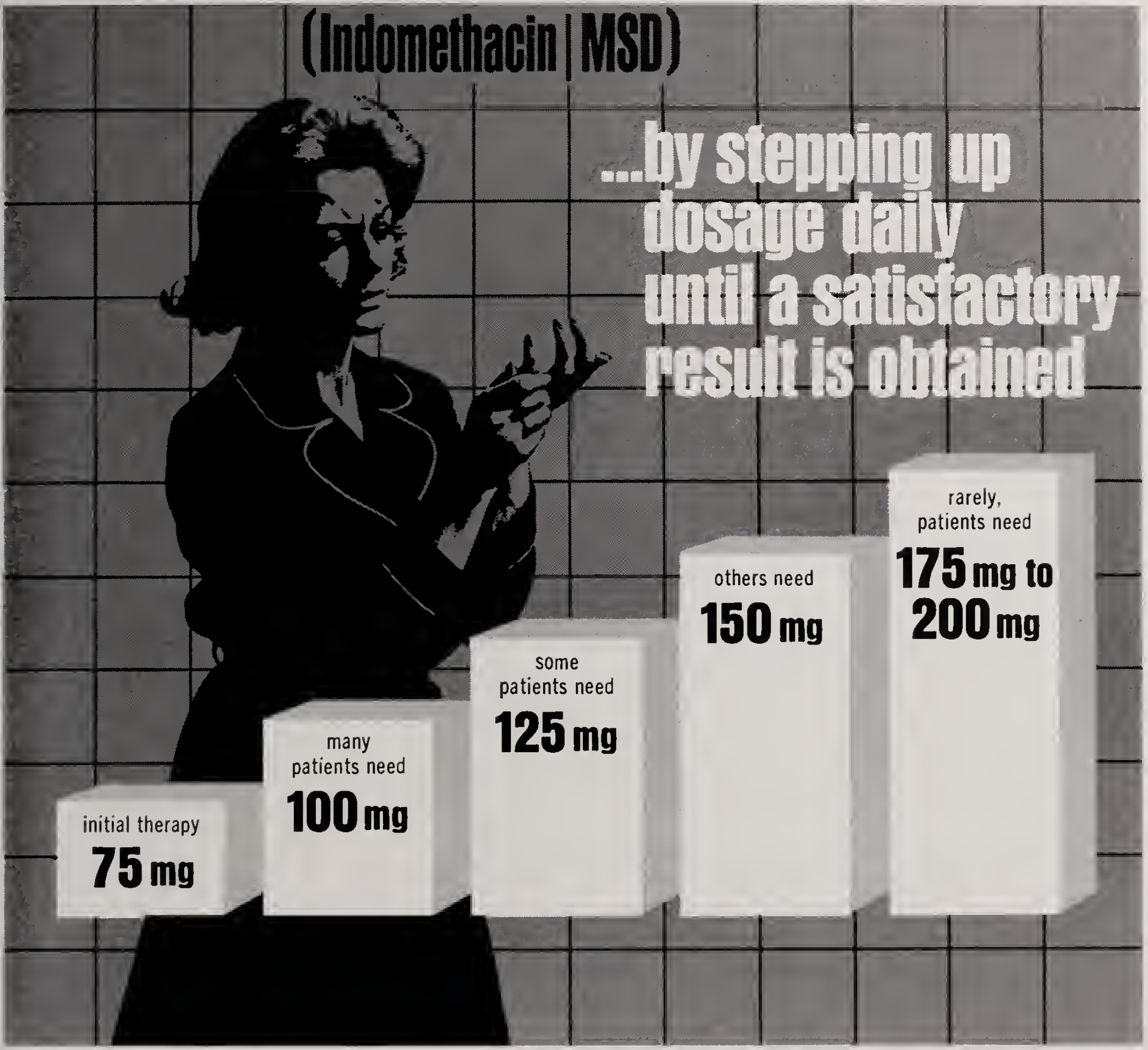
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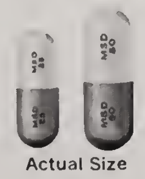
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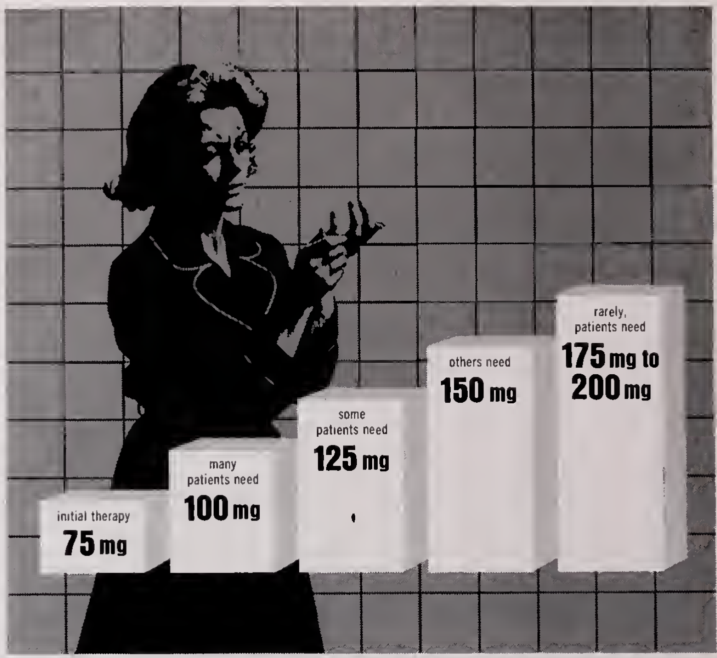

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Precautions: Use cautiously in patients with a history of peptic ulcer, gastritis, regional ileitis, or ulcerative colitis because of its potential for causing G.I. bleeding. May cause single or multiple ulceration of the esophagus, stomach, duodenum, or small intestine, and, in a few Instances, severe bleeding and perforation with a few fatalities have been reported. May potentiate the ulcerogenic effect of steroids, salicylates, or phenylbutazone. Gastrointestinal bleeding with no obvious ulcer formation has also been noted; the drug should be discontinued if G.I. bleeding occurs. As a result of obvious or occult G.I. bleeding, some patients may manifest anemia, and for this reason periodic hemoglobin determinations are recommended. G.I. effects may be minimized by giving the drug with food or with antacids or immediately after meals. In common with other drugs that have anti-inflammatory, analgesic, and antipyretic properties, indomethacin may mask the signs and symptoms of infection; avoid undue delay in initiating appropriate treatment of the infection; use cautiously in patients with existing, but controlled, infections. As with any new drug, patients should be followed carefully to detect unusual manifestations of drug sensitivity.

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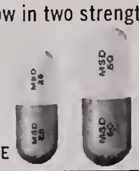

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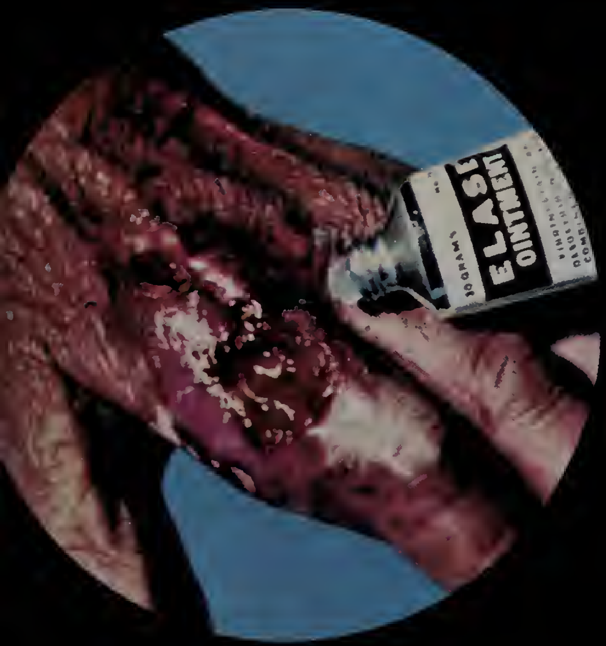

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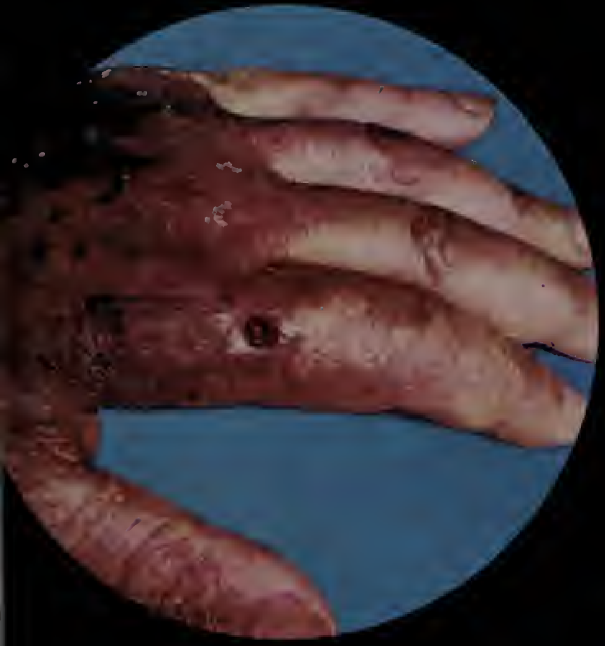

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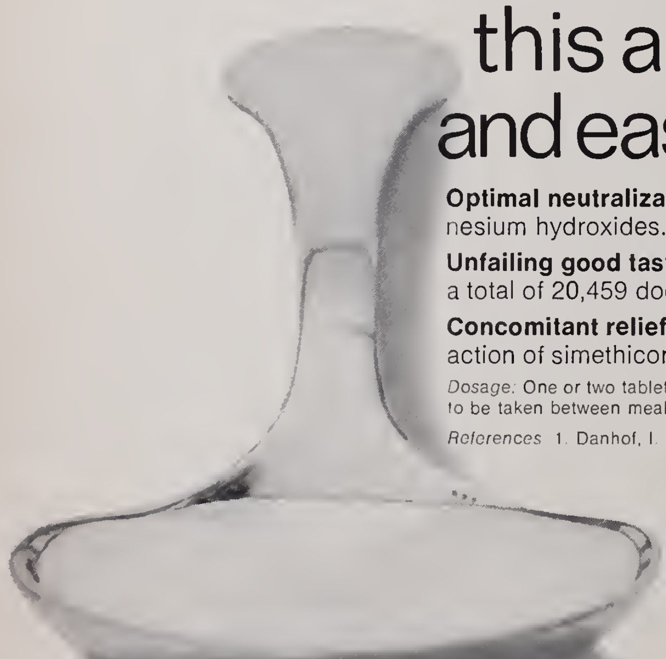

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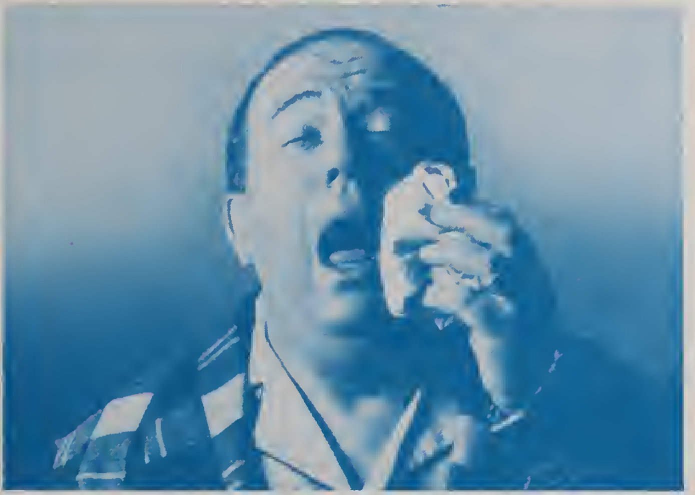

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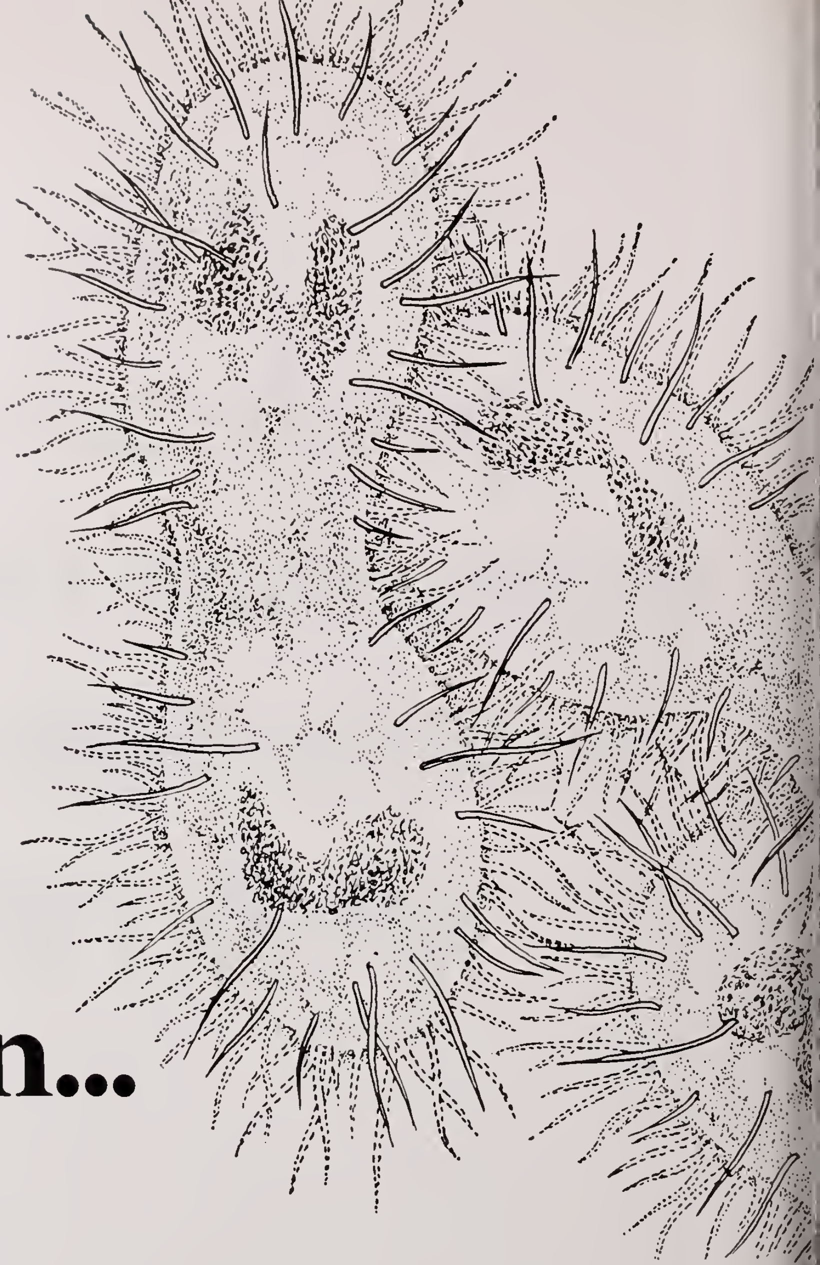

A high index of suspicion... E. coli

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Gantanol also earns its high "index of confidence" because Gantanol therapy is relatively free from complications, including the problem of bacterial resistance or superinfection.

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References: 1. Vernier, R. L., in Patient Care Feature: *Patient Care, 1*:20 (Feb.) 1967. **2.** Beeson, P. B.: "The Infectious Diseases," in Beeson, P. B., and McDermott, W. (eds.): *Cecil-Loeb Textbook of Medicine*, ed. 12, Philadelphia, W. B. Saunders Company, 1967, p. 230.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Acute and chronic urinary tract, respiratory and soft tissue infections due to susceptible microorganisms; prophylactically following diagnostic instrumental procedures on genitourinary tract.

Contraindicated in sulfonamide-sensitive patients, pregnant fe-males at term, premature infants, or newborn infants during first 3 months of life.

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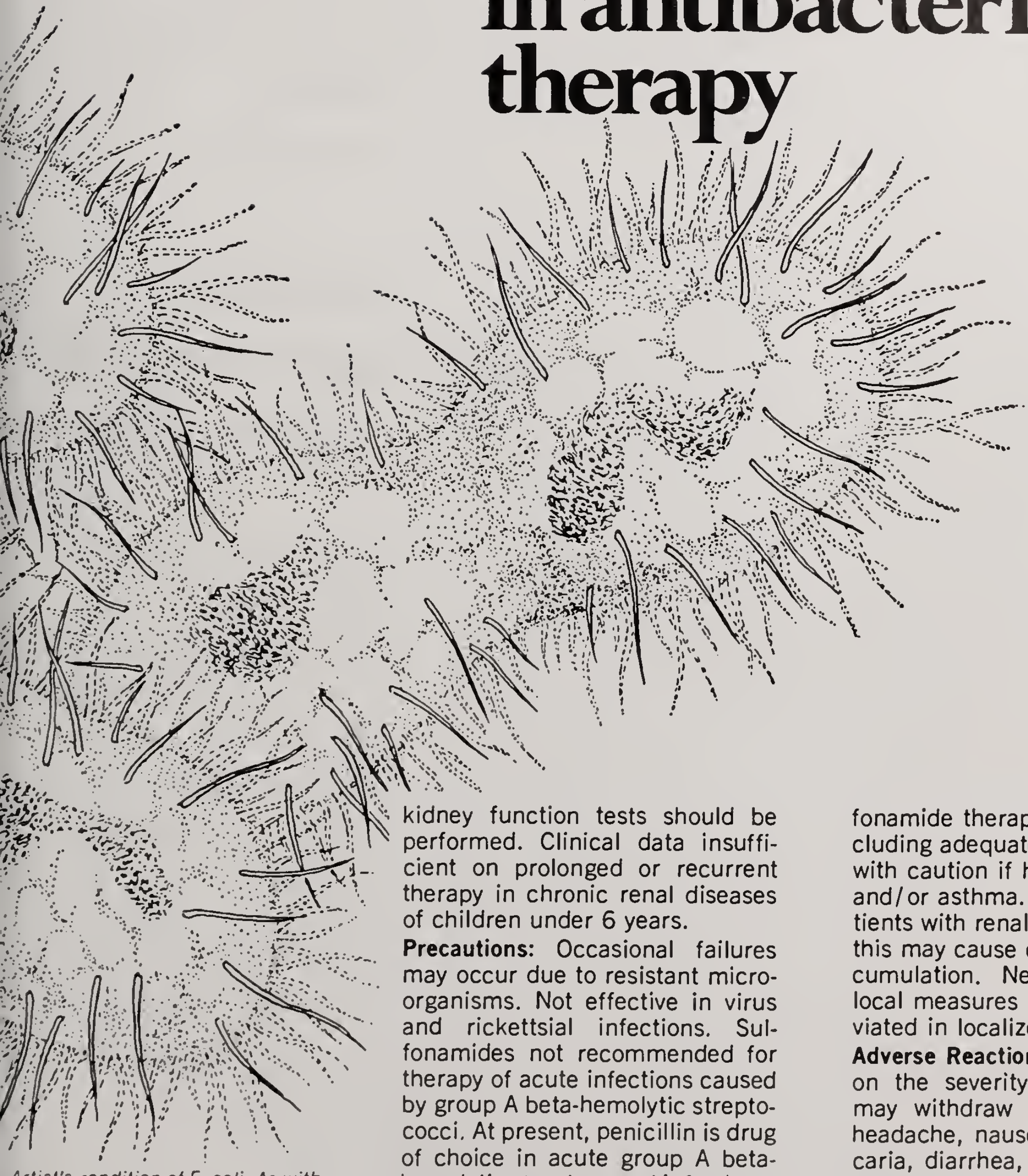

Artist's rendition of E. coli. As with ost strains of E. coli, these have flagella and are motile.

kidney function tests should be performed. Clinical data insufficient on prolonged or recurrent therapy in chronic renal diseases of children under 6 years.

Precautions: Occasional failures may occur due to resistant microorganisms. Not effective in virus and rickettsial infections. Sulfonamides not recommended for therapy of acute infections caused by group A beta-hemolytic streptococci. At present, penicillin is drug of choice in acute group A beta-hemolytic streptococcal infections; although Gantanol has produced favorable bacteriologic conversion rates in this infection, data insufficient on long-term follow-up studies as to its effect on sequelae of rheumatic fever or acute glomerulonephritis. If other treatment cannot be used and Gantanol is employed in such infections, *important that therapy be continued in usual recommended dosage for at least 10 days*. Observe usual sulfonamide therapy precautions, including adequate fluid intake. Use with caution if history of allergies and/or asthma. Follow closely patients with renal impairment since this may cause excessive drug accumulation. Need for indicated local measures or surgery not obviated in localized infections.

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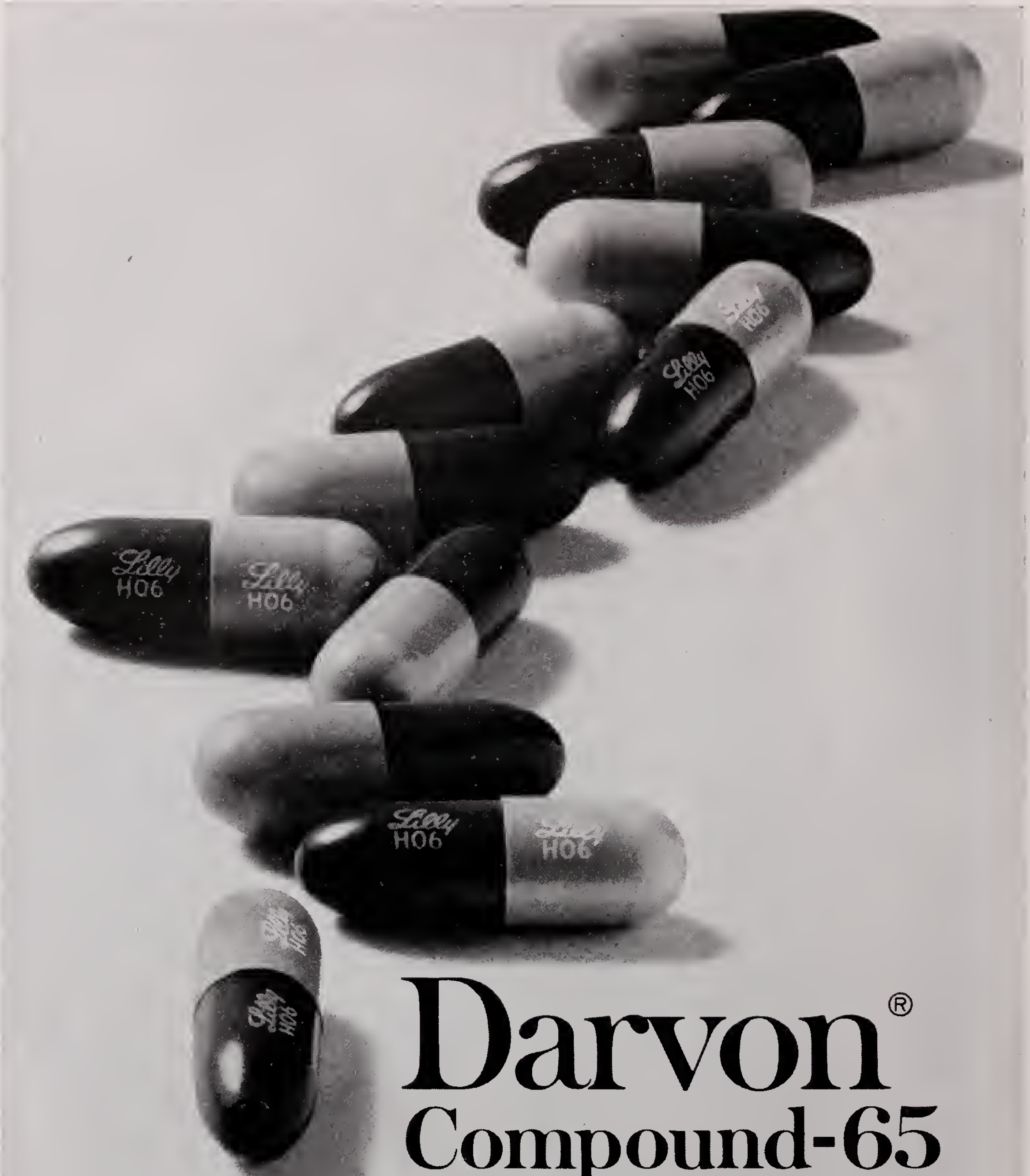

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MEDICAL ANNALS
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VOLUME XXXVIII • NUMBER 6

Symposia on Drug Equivalency and Drug Abuse

THE FIRST SEVEN PAPERS in this issue of the MEDICAL ANNALS were presented in two Symposia on Drugs before the 1968 Scientific Assembly of the Medical Society of the District of Columbia, November 22, 1968 at the Washington Hilton Hotel.

Dr. C. Willard Camalier, Jr., moderated the Symposium on Comparative Performance of Equivalent Drugs and Dr. Seymour Alpert, the Symposium on Drug Abuse: Problems as Viewed by the Law Enforcement Officer, Investigator, Community Health Officer, and Medical Clinician. The Editorial Board is indebted to Drs. Camalier and Alpert for securing these papers for publication in the ANNALS.

Comparative Performance of Equivalent Drugs*

WILLIAM J. MURRAY, M.D., Ph.D.†

THIS ISSUE of the "comparative performance of equivalent drugs" is one of high priority in the Bureau of Medicine of the Food and Drug Administration. The Agency's program has evolved from its responsibility under law to evaluate drug efficacy. Usually, in the past, when a drug's patent expired, another manufacturer could market that drug provided that the active ingredient was present in the drug product in the stated amount and the formulation otherwise adhered to general manufacturing specifications. That position of establishing only chemical equivalence was an oversimplification. Now that it is evident that manufacturing procedures can have an effect on the availability for absorption of an orally administered drug, the frequency of occurrence of decreased drug availability, as well as its clinical significance, if possible, must be elucidated clearly. How to obtain this information is an elusive question. Accepting that chemical equivalence (defined as meeting formulary or other specifications) can readily be determined, it would seem most direct to establish therapeutic equivalence in the human, since this would represent the ultimate modality of importance. Ignoring the aspects of practicality and economics, this therapeutic approach to establish a drug product as "therapeutically equivalent" still must take into account that in many clinical situations there are no reliable indicators to show unequivocally when a specific dosage is effective or not effective. Therefore, this would not provide a very sensitive method to screen for variations in rates of drug absorption. The picture is further complicated in that dosage recommendations for drugs in clinical use rarely can be presented as anything very exact. Also, an ethical and medicolegal question would be posed to the investigator studying the comparative performance of chemically equivalent drugs in patients, if a drug product should be demonstrated to lack efficacy or be an inadequate substitute therapy.

In view of these and other limitations to the determination of therapeutic equivalence, a concept of availability equivalence is being considered as an alternate index of "equivalent" drug-product comparison. "Availability equivalence" refers to the demonstration of comparable concentrations of a drug in the blood following the administration of "chemically equivalent" drugs. It requires that a tablet, capsule or other formulation must deliver the drug to the patient's blood. Most frequently it has been measured by comparing in volunteers serum level concentrations of a drug formulated by more than 1 manufacturer. While it can be argued that blood-level measurements may be an acceptable compromise substitute for therapeutic equivalence, blood levels may really represent a more sensitive method and come closer to relating to the apparent major issue—rate of release of a drug entity from its formulation and its subsequent absorption.

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* Presented as part of a Symposium on Comparative Performance of Equivalent Drugs before the 1968 Scientific Assembly of the Medical Society of the District of Columbia in Washington, D. C., November 22, 1968.

† Assistant to the Director for Drug Equivalency, Bureau of Medicine, Food and Drug Administration, Department of Health, Education, and Welfare, 2211 Jefferson Davis Highway, Arlington, Va. 22202.

The Food and Drug Administration has, in particular, been conducting human blood-level studies with "chemically equivalent" antibiotic drugs. It was initially intended to survey this important therapeutic pharmacologic class, in which some background of blood-level work already existed, because many generic and brand-named (original manufacturer or other company's brand names) antibiotics are now available on the American market. Crossover, single and multiple-dose study designs were employed. As data have been collected problems have become progressively evident. One of the most difficult is to define meaningfully what constitutes a difference, or lack of, in blood-level comparisons. It is not difficult to assess a situation where one product shows consistently high blood-levels and another consistently undetectable concentrations, but rather in the grey zone where differences between products are of a lesser magnitude. Related to the same issue is assessment of population size and the associated intra- and inter-subject variation. Other variables of the environment, physiology of the volunteers, and laboratory procedures have also come under close scrutiny. All of these many entities must be combined into a clinical pharmacologic design that will be equitable to all manufacturers of an "equivalent" drug-product. It is important to recognize that this approach makes no direct attempt to associate serum concentration with therapeutic effect.

While our Agency is deeply involved with clinical trials to compare blood concentration of active ingredients, there is also interest to develop methods of evaluating drug availability that could be carried out in animals or in a chemical laboratory. As regards animals, it should be noted that the FDA Bureau of Veterinary Medicine is concerned with the same fundamental issue of "comparative performance of chemically equivalent drugs." It is apparent that their question is really a much more complicated one, since their responsibility is to more than 1 animal species. As information is gained, perhaps an understanding of the formulation technology that accounts for differences in products will provide a solution to this problem. In the interim it will have to be determined if the differences in "availability equivalence" are associated only with obviously varying formulating techniques or if they can be detected from batch to batch of a single manufacturer's product. Also to be considered is the question of efforts being made to improve drug availability of existing product formulations, even including those drugs still under patent limitations.

In conclusion, the goal of the Food and Drug Administration must be to assure prescribing physicians, pharmacists, consumers, and third-party agencies (private or government insurance-based programs) that any pharmaceutical formulation issued by any manufacturer will provide to the the patient the active drug(s) in a pharmacologically acceptable manner. Also, it should be recognized that solid oral drug products have been almost exclusively considered in the question of drug-product equivalency. Perhaps this emphasis is justified from the viewpoint of establishing priorities, but certainly the obligation to consumers extends to all formulations such as injectables, syrups, ointments, oral and topical suspensions, etc. Finally, should not "over-the-counter" preparations, as well as prescription drugs, be considered an entity deserving this type of study?

Therapeutic Equivalency of Drugs—Fact or Fiction?*

C. JOSEPH STETLER†

WHAT I WANT TO DO in these brief remarks is to spell out in straight-forward language the position of the pharmaceutical industry on the numerous and difficult questions which have been raised as a result of the generic-drug debate. We think our position is reasonable. And we know it is not generally understood, particularly in lay circles. If it were, we honestly believe that much of the sound and fury of this debate would subside and medicine and the drug industry could excuse themselves from the political arena and turn once again to the full-time job of advancing American health-care to even greater preëminence than it now enjoys.

Unfortunately, however, we are instead witnessing the suggestion, amid great public clamor, which has been artfully aroused, of pat and simplistic solutions for complex economic and sociologic problems, with very little reference to the scientific considerations involved.

We are living in a period when the usefulness and value of drug-products now available, and even those yet to come, have never been of greater interest to those outside the channels of manufacturing, distributing, prescribing and dispensing.

The explosion of curiosity about drugs has had an untoward side-effect since good news is seldom as fascinating as bad. Hence the stories published to feed the public's appetite for news about drugs are studded with such words and phrases as adverse reactions, "overprescribing," "medication errors," "illicit diversion," "recalls," "drug abuse," and others with similar negative connotations. A casual reader of today's newspapers could easily come to the conclusion that drugs are becoming better known for the harm they can do than for the good they accomplish. The result has been to create, most unfairly, widespread doubt, bordering on fear in some instances, regarding the overall quality of the products and the professional services involved.

Coupled with this we have extensive involvement in medicine by all echelons of government. With increasing demands on it for social services—a highly volatile fuel for the political machine—the Government is attempting to provide more and more for the needs of its citizens. At the same time it is quite properly and necessarily attempting to hold down the outlay of tax funds to pay for these proliferating programs. In the case of medical care for a growing proportion of the population the Executive and Legislative Branches are concentrating their attention—and causing considerable agitation in the process—on the costs of such care. They are demanding, for example, that drug prices be reduced by whatever means on the ground that this will substantially lower the amount of financial responsibility the Federal Treasury must assume.

This drive has opened a "Panadora's box" of major issues, including the question of drug equivalency, of compulsory generic prescribing, the quality of drugs versus their price, and, very fundamentally, the question of whether the physician should be limited in some way to prescribing on the basis of price, with quality and his patient's particular need relegated to secondary consideration.

This, briefly, is the background for the environment which has evolved with alarming swiftness over the last 2 or 3 years.

By far the greatest amount of sound and fury has been directed at the generic prescribing issue. Over and again the claim has been made in official governmental circles and elsewhere that drugs with the same generic name, which meet USP or NF standards, are chemically and therapeutically equivalent regardless of their source and that, therefore, they can be administered with equal expectation of effectiveness. The apparent purpose of this claim is to convince members of Congress and the public that generic prescribing is not only safe from a medical viewpoint but also a reasonable way for the Government to hold down the cost of the health-care it finances.

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* Presented as part of a Symposium on Comparative Performance of Equivalent Drugs before the 1968 Scientific Assembly of the Medical Society of the District of Columbia in Washington, D. C., November 22, 1968.

† President, Pharmaceutical Manufacturers Association, 1155 15th Street, N.W., Washington, D. C. 20005.

Unfortunately, the debate has become corrosive and highly emotional, in the course of which it has become apparent that the views of the pharmaceutical industry have been misunderstood or misconstrued. Let me state our position quite plainly.

The PMA does not contend, and never has, that the value of a drug depends upon whether it is marketed under a brand name. We do not support the contention that generic drugs are per se better than, or inferior to, branded ones. We think, on the contrary, that the criterion is performance, and that performance is related to the competence and integrity of the maker.

We believe manufacturer identification of drug products has proved beyond question that it is the most practical and reliable measure of trust for the physician and pharmacist. They can be certain that the medicine, if it is the product of a quality manufacturer, has been carefully formulated and that its production has been rigidly controlled throughout the entire process. A conscientious firm, to borrow a television slogan, puts the quality into its product before the name goes on.

Thus, such a firm's products will be reliable, whether sold by generic or brand name. Conversely, it is plain that no matter how a slipshod producer identifies his product it is still no bargain. There are, in short, good and bad drug firms, and there are brand and generic drugs coming from both. The patient's strongest safeguard is the competition for excellence among drug manufacturers and the freedom of his doctor to discriminate between good and bad products and to prescribe only the best and most suitable medicine to meet the patient's individual need.

Identification of a particular brand or a particular manufacturer by the physician in turn justifies the manufacturer's investment, his commitment to superior performance, and provides an incentive to compete for quality recognition which no set of government regulations has ever been able to provide.

For very direct and acute economic reasons, the responsible producer cannot afford the loss of his good name in the marketplace. He must develop and improve methods of total quality control most likely to result in superior products and all-round performance, thereby earning the continued specification of his products by the physician.

It is impossible, with thousands of drug manufacturers, to expect a government agency to guarantee that every product will be of high quality. This would require analyzing every batch of every product made by every company, large or small. Clearly, the public interest must be served, given existing circumstances, principally by the manufacturer's sense of responsibility, his integrity, and the strong motivation to excel which he feels because of a prescribing system that places a premium on product and manufacturer identification.

Parenthetically, let me suggest that the system does more. It accelerates the pace of drug discovery. The miracle of modern medicine owes much to pharmaceutical advances resulting from creative research. Fully three-quarters of the 200 drugs most commonly prescribed today were unknown just a decade ago. Under the stimulus of competition, quality drug manufacturers have spent more than $4 billion since 1950 in the quest for new remedies.

It would be a national tragedy if the Government's attempts to solve the price problem, coupled with fuzzy scientific thinking or timidity, unwittingly promoted reliance on the theory of generic equivalency, thereby requiring doctors to prescribe products that do not necessarily satisfy their professional judgment, and undercutting the principle of manufacturer identification as a trusted measure of drug quality. It would be equally disastrous if the eventual effect would be the drying up of resources on which future drug discoveries depend.

I repeat, the PMA is not wedded to the proposition that branded drugs are universally good or that generically marketed drugs are universally bad. We do believe that the brand name has and will continue to provide a convenient, practical and important means of specificity. When significant therapeutic differences exist in a particular generic entity, or when medical experience or a patient's condition dictate a particular product, the brand name is a useful means of identifying the preferred medication. The public, too, has indicated its confidence in those drug products identified by a brand name. A recent opinion sampling by Caravan Surveys, Inc., a subsidiary of the Opinion Research Corporation of Princeton, New Jersey, disclosed that "brand-name drugs" are preferred over "generic-name drugs" by a ratio of 4 to 1.

Perhaps more significant was the fact that when those interviewed were asked whether they prefered a "branded product" or an "unbranded product," the preference was 10 to 1 for the "branded product." The survey was made in August 1968 and covered the entire country.

Aside from the direct medical considerations, the brand name can also be of value in economic terms. The price of tetracycline, for example, varies substantially—not simply on "brand versus generic" terms but also on a "brand versus brand" basis. The physician can, through selective choice of the brand, prescribe the most effective product for his patient and save him money by retaining control over the source of the drug dispensed.

Of course, these and related considerations—the entire price versus quality controversy, as a matter of fact—would become irrelevant and passé if we were blessed with the situation in which all drugs with the same generic name in the same dosage form performed the same. Unfortunately, however, this is simply not the case because of:

1. Inherent differences in the properties of drug products, such as solubility and dissolution rate, particle size, etc.

2. Varying formulations of drugs due to tablet compression, moisture content, potency loss due to exposure to destructive elements such as heat or light, incompatible "inert" ingredients, the passage of time, etc.

3. Inconsistent formulation of the drug due to the lack of manufacturer expertise or adequate facilities; that is, a failure to consistently produce drugs according to Good Manufacturing Principles and effective quality control techniques.

As you undoubtedly know, studies sponsored by the Food and Drug Administration on the equivalency of certain drugs are now being conducted at Georgetown and at other universities. The step is laudable and the Agency is to be commended for taking it. It will provide useful knowledge where sketchy information now exists. It could be the forerunner, at last, of resolving this entire issue which has grown to such formidable dimensions. All told, we understand that at least 50 drugs are ultimately to be examined for comparative therapeutic effect.

The first results are certainly demonstrating that variations in physiologic availability do occur among products from different sources, and they strongly suggest that variations in therapeutic activity may occur. It seems wholly reasonable, therefore, we believe, to conclude that the physician is adopting a worthwhile safeguard when he exercises control over the choice of medication for his patient through proper prescribing habits and the designation of the source of the desired drug.

Antedating the Georgetown studies has been the experience of the Department of Defense in the procurement of drugs for its far-flung programs of health care of military personnel and their dependents. To assure that it is purchasing only the highest quality products, the Department has found it necessary to establish criteria that are frequently more rigid than those in the USP or NF. Further, they have considered it vital to make intensive plant inspections. In this connection, I might mention the somber fact that there are drug firms which have failed inspections of the Defense Supply Agency a dozen or more times in less than 2 years, yet these same firms are quite free to sell their drugs tp the civilian market, and they apparently do.

Another case in point which I believe merits mention here was the withdrawal from the market some months ago of all makes of chloramphenicol except Chloromycetin® after tests showed a lack of clinical performance in the other versions. This resulted from a manufacturer's study verified by the FDA. All makes contained the same active ingredient. Most of them were brand-name drugs. All met the accepted standards. In this case, because they were antibiotics, all bore an FDA certification. Yet they showed wide variations in clinical effect when put to the scientific test.

Against this background it is hard to grasp the rationale of the Department of Health, Education, and Welfare for its implicit position that until there is proof, presumably drug by drug, showing the lack of equivalency, they will assume that it exists. Governmental and private studies of which we are aware, although admittedly sparse, would seem to support just the opposite generalization. Unless they have somehow been completely misunderstood, the results of these studies as published indicate that genuine cause for doubt about therapeutic equivalency does exist in the case of each drug so far studied.

You are familiar, I assume, with the investigation of drugs and the drug industry which has been conducted since May 1967 by the Monopoly Subcommittee of the Senate Small Business Committee. Interestingly, about a year ago Senator Nelson, its Chairman, was vigorously insisting that nonequivalency could be found, if at all, in only 6 or 8 drugs. Two months ago HEW representatives told the same Committee that nonequivalency could probably be found in 2 dozen drugs. This was a tripling of the number, but in neither instance has the public, the industry, or the scientific community been advised just which 6 or 8 or 2 dozen drugs are involved.

Lest there be any misunderstanding, let me make myself clear on one point: We do not maintain for a moment that nonequivalency will be found across the board in all of the drug products tested for biologic activity. What we do say is that evidence which has been adduced to date offers no sound reason to assume blanket equivalency. Quite the opposite, it raises serious doubts.

The FDA is on record as believing it will be able to say by 1970 that all drugs on the market are both safe and effective. Speaking for the industry, I wish I could share in this optimistic view, but I do not see any practical possibility of giving physicians grounds for that kind of confidence anytime soon.

For one thing, the number of drug firms inspected by the FDA each year is decreasing. Doubtless, the thoroughness of each inspection is increasing, but it remains true that the number of plants inspected has gone down over the past several years. Further, there is the very real fact that while imports of foreign-made drugs have shown a steady annual increase, FDA inspection of pharmaceuticals entering this country from abroad remains inadequate. Regulations for this purpose were authorized under the 1962 Amendments to the Food, Drug and Cosmetic Act. However, these regulations have never been issued.

I do not mention these things to criticize the FDA, let me assure you. The Agency is capable of doing certain things, but guaranteeing the equivalency of the Nation's drug supply is not one of them.

In closing, let me acknowledge that it is obviously not sufficient or constructive simply to suggest that the present system of drug surveillance is inadequate. In the light of the current situation the drug industry and the FDA must work jointly to develop alternatives to present procedures designed to permit the application of available FDA resources where they are most needed, and by placing more responsibility on the firms which demonstrate a capacity to handle it. Although unpublished, the history of Government-industry coöperation over the years in the formulation of good manufacturing and other standards is long and has been highly productive. I am sure this coöperation will be as necessary, desirable and fruitful in the future as it has been in the past.

Meanwhile, it seems clear that an urgent need of the present is to elevate the equivalency question to a more rational level than the simplistic "brand vs. generic" dispute if we are to get on with the serious business of insuring the quality of the Nation's drug supply. It is rather inane to stand by while one side is said to claim that "generic drugs are fine" while another is alleged to claim that "brand names are better." The truth lies on higher ground, and I believe the medical profession can contribute signally toward communicating the true facts to the American people and the makers of their laws, based on the knowledge and experience of practicing physicians.

It is difficult to see how anyone can reasonably conclude that the drug industry should bear the sole responsibility for opposing a patently ill-founded concept such as this, and the proposed actions, equally unwise and misguided, to which it has given rise. They would unquestionably harm the health-care system of which medicine, pharmacy, industry and the academic community are inseparable parts. Surely it follows that whatever inflicts serious injury on one component damages the others as well.

Together we comprise one entity for action and service in our modern society. Over many years we have shared in a great, overall effort and we have shared in the satisfaction of the achievements. Now we must share in the protection of our common interests so that future generations may know the blessing of a system of health-care which has set this age apart from all others.

Comparative Performance of Equivalent Drugs—Some Questions and Answers*

GERHARD LEVY, Pharm. D.†

QUESTION: Is it possible for "generically equivalent" drugs to differ significantly in therapeutic efficacy?

ANSWER: Definitely yes. There are numerous reports in the literature (see supplemental reading) which illustrate this possibility.

Q. Can the effective enforcement of present USP and NF standards and FDA regulations prevent the occurrence of such differences among products on the market?

A. No. Neither the USP and NF nor the Food and Drug Administration have tests or standards which can assure the adequate biopharmaceutical performance of pharmaceutical dosage forms. The former FDA Commissioner, Dr. James L. Goddard, stated recently that "The United States Pharmacopeia and the National Formulary provide no biologic performance test from which we can conclude whether a particular dosage form of a particular drug will perform as it is supposed to perform in the human."[1]

Q. Is it likely that significant differences in the efficacy of "generic equivalents" (i.e., products of different manufacturers) might occur?

A. Yes, it is. The design and manufacture of effective pharmaceutical dosage forms is a complex and highly sophisticated science. Many not readily identifiable factors and variables can have a pronounced effect on the performance characteristics of pharmaceutical dosage forms. It is not rare that a new drug product must be reformulated several times in order to obtain adequate performance characteristics. Typical examples are indomethacin, griseofulvin, and spironolactone, all of which were poorly absorbed, relatively ineffective, and in one instance highly ulcerogenic in the dosage forms originally made available. Significantly, 2 of these drug products were reformulated after they had been on the market for some time.

Q. How frequent is the incidence of therapeutically significant differences between "generically equivalent" products?

A. The incidence is unknown. All statements to the contrary are uninformed and irresponsible. No one has tested every manufacturer's product of a given drug, assessed the possible differences between different lots of any one product, determined if some or all of these products might undergo significant changes in performance characteristics during normal storage conditions, and established the relative frequency of use of each of these products. Yet this information is necessary before one can determine the incidence of product failures. Statements such as "In my opinion, there are fewer than 2 dozen drugs where therapeutic differences may be a problem" (FDA Commissioner Herbert L. Ley, Jr., August 20, 1968) and "Except in rare instances, drugs which are chemically equivalent, and which meet all official standards, can be expected to produce essentially the same biological or clinical effects" (Assistant HEW Secretary Philip Lee on behalf of the HEW Task Force on Prescription Drugs) are unfortunate. One would expect of HEW, its officials, and its agencies the same standard of performance as they demand of the pharmaceutical industry in that claims and statements concerning the clinical performance of drugs must be based on adequate and accessible scientific data. These have not been presented. Many pharmaceutical formulation failures are not readily recognizable, and the effects of such failures are often ascribed to other causes. By former FDA Commissioner Goddard's own admission: "We have not been aware until recently what it is we should be looking for or how to look for it." Even today we do not know if the results of studies with healthy ambulatory subjects apply also to sick patients. There is preliminary evidence which suggests that the relative efficacy of different dosage forms of the same drug may be different during hyperpyrexia, when the drugs are administered to patients who are in bed, and in certain disease states. Intellectual honesty demands, therefore, that the stated question be answered forthrightly: "We do not know."

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* Presented as part of a Symposium on Comparative Performance of Equivalent Drugs before the 1968 Scientific Assembly of the Medical Society of the District of Columbia in Washington, D. C., November 22, 1968.

† Professor of Biopharmaceutics and Chairman of the Department of Pharmaceutics, School of Pharmacy, State University of New York at Buffalo, Health Sciences Building, Buffalo, N. Y. 14214.

In addition, I am not at all convinced that the effort and expense involved in studies which would establish the incidence of pharmaceutical formulation failures are justified. Like the incidence of a disease, the incidence of formulation failures can vary with time, depending on prescribing habits, institutional purchasing policies, relative changes in the prices charged by competing manufacturers which in turn can affect relative sales patterns, the entry of new manufacturers in the market, and so on. It is much more preferable to take the positive approach, which is outlined in the answer to the next and last question.

Q. Are "brand name" drugs more efficacious (more effective, "safer," "better") than "generically equivalent" products?

A. There is no information at present which indicates that one or the other type of product is consistently superior. The question and the controversy itself do not address themselves to the central issue: Physicians and pharmacists have the obligation to evaluate pharmaceutical products on the basis of specific evidence and not on the basis of generalized claims and unsupported statements. The public has the right to demand of physicans and pharmacists the exercise of qualified professional judgment in the selection of drugs.

It is not proper for us to delegate this function, this definitive and specific decision concerning the particular drug product that we prescribe or dispense, to government agencies or purchasing agents. When the FDA decides for or against permitting the marketing of a drug product or dosage form, we as health professionals and taxpayers should have the right to be informed of the scientific facts and considerations upon which that judgment is based. The FDA carries out periodic potency determinations of marketed pharmaceutical products; the results of these studies should be made available to us, including the name of the product, the manufacturer, the lot number, where it was obtained, the results of the assay, and the analytical method used. Since some of these assays have been incorrect in the past, manufacturers should have the right to obtain a sufficient quantity of the product in question to have the assay rechecked by their own personnel and by an independent laboratory.

But the most important obligation for making available the necessary evidence upon which we must base our own professional judgment rests upon the manufacturer. He must show to our satisfaction that his product is consistently of high quality with respect to potency, purity, stability, absorption characteristics, and other pertinent variables. Particularly with respect to absorbability, which appears to be the most serious problem at present, we have a right to demand:

1. Clinical evidence that the product is adequately absorbed. The type of experimental subjects used (healthy volunteers, etc.) should be specified, and studies in special types of populations (bedridden patients, etc.) should be carried out when indicated.

2. Evidence of adequate control to prevent significant lot-to-lot variations in biopharmaceutical performance characteristics. If the control tests are physical-chemical rather than clinical, it must be shown that the in vitro tests can indeed distinguish between efficacious and defective products.

3. Evidence that the performance characteristics do not change significantly under normal storage conditions during the realistically estimated shelf-life of the product.

4. Once a product is on the market, a statistically realistic number of units obtained periodically by random selection from pharmacies throughout the country should be retested for potency, evidence of chemical or physical changes, drug release characteristics, etc. The results of these tests should be available to inquiring physicians and pharmacists.

In this intense and often bitter debate of the generic product issue we have heard many opinions and few facts. The Pharmaceutical Manufacturers Association spends large sums on institutional advertising and makes nonspecific statements such as "The excellence of a product must depend upon the excellence of the manufacturer" (PMA press release of August 5, 1968). If this claim of excellence is based on facts there should be no difficulty in making the specific facts concerning specific products available to us. In the final analysis the solution to the problem of drug quality and drug economics is in our hands. If we refuse to prescribe and dispense drug products about which we do not have sufficient information to come to a professional judgment, and if we make our decision on the basis of scientific evidence as well as economic prudence, then surely the public interest will be well served.

(Continued on page 307)

The Drug Abuse Problem as Viewed by the Law Enforcement Officer[*]

JOSEPH M. ARPAIO[†]

DIFFERENT enforcement considerations are presented by the opiates, on the one hand, and the dangerous drugs on the other. To get opiates into the country requires an illegal act of smuggling, and their possession and sale in virtually every circumstance are criminal offenses over which the State and Federal governments have concurrent jurisdiction. The dangerous drugs for the most part enter the illicit market by way of diversion from domestic supplies. Simple possession of these drugs is now a misdemeanor offense under any Federal statute. Under State law it may or may not be an offense, depending on the State and the dangerous drug involved. It should also be noted that not all abuse of dangerous drugs stems from the illicit traffic. Abuse may occur, for example, if a dose of barbiturates greater than that called for in a legal precription is taken. Not even perfect and total enforcement of the drug laws could prevent abuse of this kind.

The illicit traffic in depressant and stimulant drugs is quite new, and how it operates is only partially understood. It appears to be fed mainly by diversions from the chain of legitimate drug distribution. Diversions are known to have occurred at all points in the chain, from the manufacture of the basic chemicals to delivery of the finished dosage forms of the drug to the consumer. Large quantities of the basic depressant and stimulant powders have been ordered from chemical brokers and dealers by persons using fictitious names, indicating firms engaged in research. In some cases, involving diversions of millions of capsules over periods of a few months, drugs have been sold directly to illegal peddlers by manufacturers of the dosage form. In other cases drugs have been diverted by salesmen of manufacturing or wholesale firms, sometimes through the medium of fictitious drugstores. Again, millions of tablets have been involved. Unlawful sales by retail pharmacists and by physicians have occurred. So, of course, have larcenies from plants and thefts from interstate shipments. Apparently unregistered drug manufacturers, whose product duplicates the genuine article in substance, and drug counterfeiters, whose product duplicates the genuine article in appearance only, are also major sources of illicit drugs. Illegal means of obtaining drugs, such as forging prescriptions, are also practiced.

The hallucinogens are not available for legitimate distribution. In some cases the drugs are smuggled across the Mexican border. In other cases the raw materials are present in large supply in this country, and supplies of peyote have reputedly been obtained by placing an order with a "Cactus Company" in Texas. LSD, while it may be produced by a relatively simple chemical process, is thought to come frequently from foreign sources, both legal and illegal. The problems of detecting this drug are special ones. It is colorless, tasteless, odorless; 100 mcg. is enough to cause the characteristic effects.

Those involved in illicit drug traffic are either suppliers or consumers. They range from the organized crime boss, who organizes 50 Kg heroin shipments, to the college student who smokes a single marihuana cigarette.

The opiate traffic on the East Coast is in heroin of European origin. The importers, top members of the criminal element and members of organized crime, do not handle and probably do not ever see a shipment of heroin. Their role is supervisory and financial. Fear of retaliation, which can be swift and final, and a code of silence protect them from exposure. Through persons working under their direction the heroin is distributed to high-level wholesalers, who are also members of the drug organization. Beyond this point the traffic breaks out of the hands of the organized crime element and moves in many directions. Low-level wholesalers are at the next echelon; they are on the neighborhood level. Retailers, street peddlers (who are often themselves addicts), and addicts round out the system.

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[*] Presented as part of a Symposium on Drug Abuse before the 1968 Scientific Assembly of the Medical Society of the District of Columbia in Washington, D. C., November 22, 1968.

[†] Deputy Regional Director, Bureau of Narcotics and Dangerous Drugs, Baltimore Regional Office, 31 Hopkins Place, Baltimore, Md. 21201.

Not enough of the people in the dangerous drug traffic have been caught to form valid judgments about the traffic's personnel. It appears that unregistered manufacturers and wholesalers and bulk peddlers are key figures. It has been alleged, but not proved, that trafficking in these drugs has become an activity of organized crime. Certainly the profits are there in the case of the depressant and stimulant drugs. The hallucinogenic drug traffic appears to be less profit-oriented than others.

The objectives of law enforcement are to reach the highest possible sources of drug supply and to seize the greatest possible quantity of illicit drugs before use. These are difficult goals, given the fact that drug transactions are always consensual. There are no complaining witnesses or victims; there are only sellers and willing buyers. The enforcement officer must therefore initiate cases. He must find and take up positions along the illicit traffic lanes. The standard technique for doing this is undercover investigation during which an officer assumes another identity for the purpose of gathering evidence or making a "buy" of evidence. The use of informants to obtain leads and to arrange introductions is also standard and essential. He may supply information out of motives of revenge or monetary reward. More typically the informant is under charges, and consents to give information in return for consideration in the criminal process, such as a reduction of those charges. Frequently he will make it a condition of coöperation that his identity remain confidential.

The payoff in enforcement is the "big case" against the major violator with executive rank in the traffic. This man is hard to identify and harder to implicate with legal evidence. He has a shield of people in front of him, and by not handling drugs himself he removes his liability to prosecution under laws that prohibit possession, sale, or other such acts. The conspiracy laws are the most useful weapon against such a person, and over the years many important convictions have been obtained under these laws.

Judgments about enforcement results are hard to make. Experience with the opiate laws has been the longest. There are persuasive reasons to believe that enforcement of these laws has caused a significant reduction in the flow of these drugs. The best evidence is the high price, low quality, and limited availability of heroin today as contrasted with the former easy availability of cheap and potent heroin. Arguments based on comparisons of the number of addicts in the general population at the different points in time are difficult to assess because of the difficulty in preparing estimates. However, there is a widespread conviction that the incidence of addiction in the general population has declined since the enactment and enforcement of the narcotic control laws.

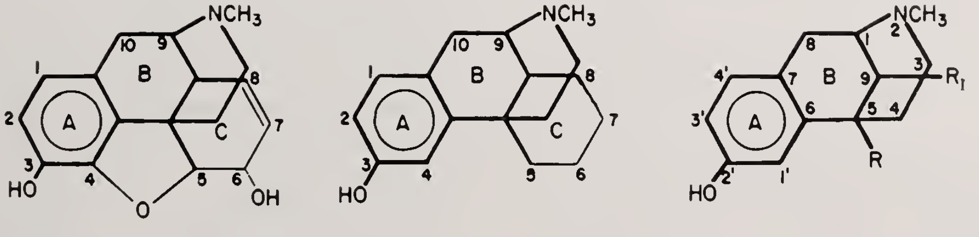
The police are not only first line case-finders for troublemaking or troubled people, they are also under pressure to prevent crime in general and to prevent drug addiction in particular through suppression of illicit drug use and sales. These are all difficult tasks, for the police cannot control behavior prior to its occurrence nor can they suppress the private needs and vices of individuals. A variety of charges are hurled at law enforcement from concerned citizens and officials; some of the charges, such as use of informants, buying dope, using wire tap, and so on, are accurate. However, what is overwhelming is that police conduct is the consequence, at least in part, of the immense task put upon them.

The Drug Abuse Problem as Viewed by the Investigator: Progress in Analgesics*

NATHAN B. EDDY, M.D., D.Sc. (Hon.)†

THE SEARCH for a better analgesic without dependence liability has been going on a long time. I have been associated with it for almost 40 years. There have been many disappointments but an occasional glimmer of success; indeed, 1 or 2 developments which might be considered bright lights have kept us going. Among the most important are the relation of agonist (morphine-like)-antagonist properties in the same analgesic agent; the simplification of the morphine molecule; and the qualitative differences in the optical isomers of some analgesic compounds.

Simplification of the morphine molecule aroused, perhaps, the greatest interest and the greatest profit. We had learned that taking off one of the hydroxyls, the one at position 6 (figure 1), increased and destruction of the oxygen bridge decreased markedly analgesic potency, but when both changes were effected simultaneously in the production of the morphinans on the way to the complete synthesis of morphine, the result was favorable, as in levorphanol (Dromoran®), a better analgesic than morphine, especially orally, but with morphine-like dependence liability.



I Morphine (-) II Levorphanol (-) III 6,7-Benzomorphans

FIG. 1. Simplification of the morphine molecule.

The consensus for a long time was that a methyl group on nitrogen was the optimal, if not the obligatory, configuration for analgesic activity. A couple of fortuitous discoveries and systematic investigations begun in the 1940's voided this concept. Substitution of methyl by allyl, as in the change from morphine to nalorphine, did develop an antagonist, but we learned in the mid-50's that some morphine-like properties, including analgesia, were retained. The antagonist, however, did not sustain or produce a drug dependence of morphine type.

Further simplification, opening ring C of morphine or morphinan, evolved the benzomorphans, some of which were also more powerful than morphine. But more importantly, in the benzomorphans some separation of analgesia and dependence began to appear. Phenazocine, for example, was 3 or 4 times more potent than morphine for pain relief and less effective in the production of morphine-like physical dependence. The 2 effects were modified in opposite directions.

The shift to antagonist, or to a mixture of agonist and antagonist properties by substitution of allyl for methyl on nitrogen, occurred whether the basic structure was morphine, morphinan, or benzomorphan. Also the group on nitrogen did not have to be allyl. It could be a modified allyl, cyclopropylmethyl, cyclobutylmethyl, etc., as long as the outward span of the group from nitrogen did not exceed 3 carbons.

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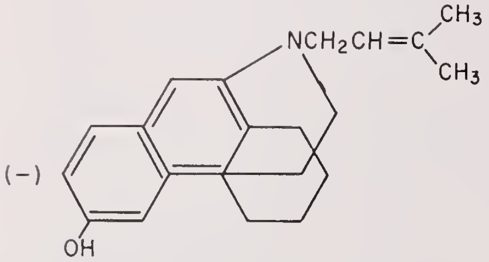
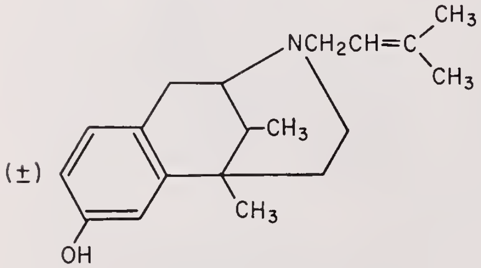
† Consultant to the National Institutes of Health, the D. C. Bureau of Narcotics and Dangerous Drugs, and the World Health Organization; address: 7055 Wilson Lane, Bethesda, Md. 20034.

Since many of the antagonists retained analgesic potency and the benzomorphans generally exhibited less dependence liability, we speculated that a benzomorphan with the proper group on nitrogen might yield the product we were looking for, and one developed through this line of reasoning seems well on the way to that end.

Pentazocine (Talwin®) is a dimethylallyl benzomorphan (figure 2). The upper formula in the figure illustrates the comparable difference with morphinan to the basic structure. This compound is a very weak antagonist and morphine-like even to the point of producing physical dependence. Pentazocine with same structural change as a benzomorphan is a good analgesic with a parenteral dose of 30 to 50 mg. and an oral dose nearly the same. It can produce a little respiratory depression but not to the extent of apnea. It does not support a physical dependence of morphine type, but if such is present, abstinence phenomena may be precipitated.



(−)-3-HYDROXY-N-(3,3-DIMETHYLALLYL)-MORPHINAN



PENTAZOCINE

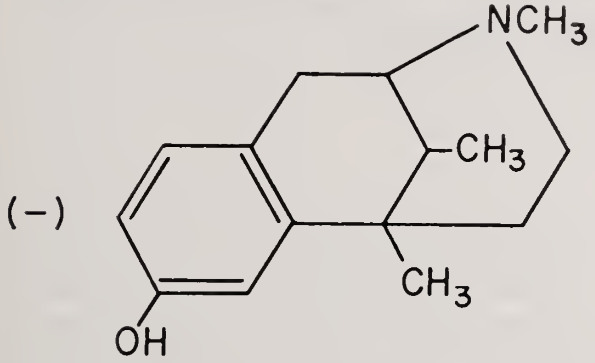
FIG. 2. Comparable weak antagonists in 2 series.

The antagonists, nalorphine and the others, besides the usual side-effects, nausea, dizziness, etc., in a small number of cases, may produce disturbing or bizarre subjective effects, such as anxiety, fear of impending death, etc. The severity of these symptoms is related in part at least to the strength of the antagonistic action. Pentazocine is a weaker antagonist than nalorphine and rarely produces these disturbing effects with pain-relieving doses. They occur more frequently, of course, when the dose is increased.

Curiously, it has been reported that a few persons, previously abusing other drugs, have increased their consumption of pentazocine to very large amounts, 600 or 800 or more mg. per day, and have claimed to experience satisfaction and relief. These reports have the earmarks of a developing psychic dependence, contrary to what would be expected on account of the psychotoxic effects which have been mentioned. It may be that a few persons, perhaps because of the personality disorder associated with their previous drug dependence, react to the bizarre subjective effects to be expected with large doses of pentazocine as some do to the psychic effects of large intravenous doses of amphetamines or cocaine, and actually enjoy, or claim to enjoy, the mental disturbance, confusion, anxiety, etc. because of the disassociation from their environment. The occurrence of this response to pentazocine has been very infrequent; about 20 instances have been reported for a market of more than 50 million doses. It is, however, a possible side-effect of which the physician should be aware and a caution against excessive dosage buildup.

From both theoretical and practical viewpoints I think we can conclude that physical dependence of morphine type on an analgesic drug can be avoided. Chemical manipulation and pharmacologic study have shown the way to bring this about. Chemical manipulation, however, has not avoided entirely the possibility of psychic dependence. This is a personal reaction to subjective effects, and some people seem to like what is unpleasant to most of us. Dr. Keats once said that perhaps we should look for a pain reliever which would at the same time make the patient as mentally uncomfortable as he could stand, but even this doesn't seem to work necessarily. How to affect the likes of some people we certainly don't know.

Just a word about another recent development, another glimmer, the full purport of which we do not know yet. Benzomorphans are synthesized generally as racemates which may be resolved into optical isomers. Figure 3 illustrates 2 in which the isomers differ both quantitatively and qualitatively. In each case both isomers are analgesic, but the levo-isomer is much more potent in this respect. On the other hand, the dextro-isomers are more morphine-like and support a dependence of morphine type. The levo-isomers exhibit antagonistic properties and precipitate abstinence phenomena in an experimental morphine dependence. Both the levo-isomers are undergoing clinical trial and are being studied for dependence liability in man. Both are at least equivalent to morphine as analgesics in man.



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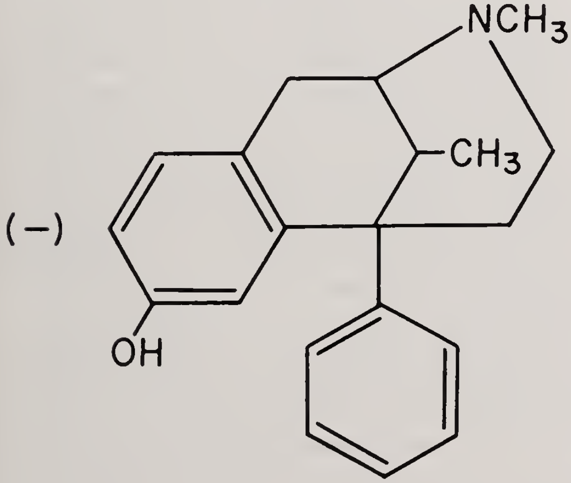

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FIG. 3. Levo-isomers with analgesic and antagonistic properties.

Other recent developments might be described if time permitted: further simplification of the morphine-like molecule to the phenylpiperidines and the phenylcyclohexanes, the demonstration of agonist-antagonist properties in analgesic compounds with structures unrelated to that of morphine, the usefulness of cyclazocine and other antagonists as deterrents to relapse to abuse of opiates, etc. During the past year more than 100 new compounds have been received from various sources for screening for analgesic and dependence-producing properties. Our search is not over by any means.

Comparative Performance of Drugs—Levy

(*Continued from page 302*)

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The Drug Addiction Problem as Viewed by the Public Health Officer*

MURRAY GRANT, M.D., D.P.H.†

MANY OF YOU will recall the Greek myth about Hydra, the 9-headed monster. When 1 head was cut off 2 new heads grew in its place unless the wound was cauterized. Hercules, in one of his notable feats of strength, was said to have slain the monster.

The drug addiction problem can be likened to that monster, and the campaign against drug traffic and addiction calls for Herculean efforts. The drive against drug addiction involves 3 major forces: education and prevention of drug abuse, control of drug traffic by law enforcement agencies, and medical supervision and rehabilitation of addicts. We in the health field are, of course, most concerned with the medical aspects of drug abuse.

In considering any official statistics on drug addiction one must remember that they are based generally on figures taken from police records and admissions to treatment facilities. These records do not include those drug addicts who never have been involved with the police and never have been treated for drug addiction. While the Federal Bureau of Narcotics and Dangerous Drugs had recorded, as of December 31, 1967, a total of 62,045 drug addicts in this country, it is quite probable that on that date there may have been 3 times that many. Here in Washington we estimate our present drug-addicted population at 5,000 persons.

Crime is one of the most obvious side issues of drug addiction here in the District, as it is elsewhere. One can only speculate on the total cost to the community of law enforcement and welfare expenditures stemming from drug abuse.

I can, however, give one set of documented figures stemming from drug addiction in the District—figures which may shock you. Two-thirds of the prisoners presently confined at Lorton Reformatory and 95 per cent of those at the Women's Detention Center had drug addiction problems when they were committed.

Drug addicts and chronic alcoholics have many similar characteristics. Both groups are driven by an overwhelming compulsion, usually stemming from personality disorders and inability to face demanding situations. Personality changes and malnutrition develop among both, although more radically among the alcoholics.

Successful treatment and rehabilitation are possible for the majority of both types, although some exceptions may be noted. Withdrawal from narcotics is extremely painful and sometimes dangerous, varying in length according to the type of drug and the individual's character. Rehabilitation of long-term acute alcoholics is made more difficult by the characteristic physical deterioration of such patients, often including extensive and permanent brain damage.

One danger peculiar to the narcotic addict is susceptibility to infection because the "junkie" rarely sterilizes the needle in his anxiety for the "fix." The needle, carrying blood cells from the veins of all the previous users, may bring him not only a transient release from his troubled world but also the unpleasant realities of tetanus, hepatitis, and syphilis. Abscesses at the puncture point frequently serve as another unwanted dividend from use of an unsterilized needle. Since the unborn child is nourished through the placenta the infant born to a drug-addicted mother becomes an immediate medical problem since such babies are drug-addicted at birth and must go through the withdrawal period.

Although the District of Columbia has been hampered in its work with drug addicts in the past, partly through lack of understanding and partly through lack of funds, the development of increasingly comprehensive legislation has been helpful and promises to be more so. In 1956 the District was empowered under Public Law 674 to commit suspected narcotic users to a hospital approved by the court. Generally, such patients were sent to the U.S. Public Health Service Hospital at

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† Director of Public Health, District of Columbia Department of Public Health, Washington, D. C. 20001.

Lexington, Kentucky, where there presently are approximately 40 drug addicts from this City. When these individuals reach the point where outpatient treatment can take the place of hospitalization, they are released to District authorities for 2 years of supervision. Any evidence of relapse into drug use may result in recommitment to the Hospital.

The Narcotic Addict Rehabilitation Act (NARA) of 1966 offers the District of Columbia further opportunity to extend and expand services to drug addicts. Of great importance is NARA's authorization of Federal support to States for specialized training programs and for construction, staffing and operation of new addiction treatment facilities on a joint Federal-State basis. NARA thus makes it possible for the first time in local population centers to establish total programs of rehabilitative services for drug addicts.

Heretofore, under existing laws, the District has hospitalized addicts in withdrawal stages, regardless of the type of drug addiction. Once discharged, the patient usually was advised on availability of outpatient treatment. Generally, however, he found himself back in his original environment among old companions and faced with familiar problems. Almost inevitably return to drug use followed.

In March of this year the District Health Department opened its first formally structured program for treatment and rehabilitation of drug addicts on an outpatient basis. Called the Drug Addiction Treatment and Rehabilitation Center, it is located at 1825 13th Street, N.W.

Staffed to provide a full range of services on an outpatient basis, with day-care facilities available for certain patients, the Center's program presently is limited to patients addicted to opium derivatives, principally heroin. In addition to medication, counseling, physical and psychologic examinations, individual and group therapy and other suitable procedures, the Center's program also provides for hospitalization of patients with acute withdrawal symptoms. Vocational counseling services, including guidance, testing, training and placement, are available.

When an addict is admitted to the Center's treatment program, a staff conference is held to determine the most advantageous course of treatment for him, since each patient receives individually tailored attention. If he requires a structured living situation to facilitate his adjustment, he may be admitted to a halfway house, such as that at 519 C Street, N.E. This residential facility is provided for a limited number of drug addicts.

An integral part of the Health Department's program for drug addicts, the halfway house constitutes a major therapeutic step in the addict's return to constructive life. He can be accepted there only after he has passed the withdrawal stages and no longer uses drugs.

It is no easy matter for an addict to mold his life into a new pattern, but as a resident in a halfway house he has professional support as well as the understanding of staff personnel who are ex-addicts. Residents join in group therapy sessions, and, as needed, outpatient treatment and individual therapy and counseling are available.

The Health Department's drug addiction staff includes 3 vocational counselors who are responsible for job-testing and counseling, assistance with job placement, and the maintenance of liaison with the U.S. Employment Service to provide residents with opportunities for employment.

The relapse of an addict after treatment frequently occurs because the community treats him as an outcast. In the halfway house, resolve is strengthened and limitations are clearly defined. The subtle pressures of this form of communal living help an addict to see more clearly not only his addiction problem but the other problems from which he sought escape.

Even though we are aware that there really is no prototype of the drug-addicted individual, certain similarities exist among those who have come within the scope of the Health Department's program. Generally our patients have been young adult males, undereducated, unemployed, underprivileged, and unmotivated.

I must point out that, in spite of the fact that addicts who come to the Center on 13th Street usually are from the lower socioeconomic groups with little formal education, their intelligence level is amazingly high and they are extremely sensitive. Frequently, native intelligence and sensitivity are the only plus factors available at the beginning of the treatment and rehabilitation course.

Common among addicts are existence with no goal except the next "fix," personality or psychologic maladjustments, and fear of inability to control hostile and aggressive tendencies. Once the "fix" is obtained, other problems, maladjustments and fears vanish, to be replaced by euphoria.

Of the approximately 400 addicts who came to the Center in its first 4 months of operation, about half have remained with the program, in which the greatest degree of success seems to have been with individuals in their thirties and over. Of those presently in treatment, 18 are patients who volunteered twice for treatment before being accepted.

Many volunteer for treatment for a variety of reasons. For instance, since addiction to any narcotic is characterized by development of tolerance, the frequency of a "fix" must be stepped up, and thus the cost increases rapidly to a point where the addict is unable to support his habit. This type of addict views the treatment routine as a means of reducing his tolerance to a level at which he can support it.

Others may apply for admission to the program as a way of easing withdrawal symptoms brought on by an interruption in his supply line. For instance, last April many addicts who support their habit by shoplifting found that widespread looting cut off the availability of salable items and also their "fences." In addition, the civil disturbances caused most "pushers" to simply vanish from their haunts.

On the positive side, many volunteer for treatment at the Center because they have mellowed a bit and have become more mature in their approach to the problems which originally drove them into drug addiction.

It has been a rare experience for Center personnel to find true dependence on narcotics among their patients. The greed of money-hungry "pushers" is so great that they cut or adulterate their stock, effectively reducing its strength and increasing its monetary value. If a quantity of truly high-quality heroin became available to addicts here, many would die since their systems are not adjusted to such strength.

Heroin can be mixed with any fine white substance such as talcum powder, crushed aspirin, baking soda, or household cleansers. An example of the lengths to which "pushers" will go in cutting their stocks was brought to light recently in one of the District courtrooms. During the trial of a known "pusher" charged with the sale of narcotics, he insisted on chemical analysis of the evidence against him. The defendant "beat the rap" when the laboratory report showed the substance to be a powdered Bufferin® and Ajax® cleansing powder, with no traces of narcotics. One wonders whether or not the Better Business Bureau should have been notified.

In our Drug Addiction Program as described in this paper, heroin is, without question, our major drug problem, primarily, we believe, since we deal mostly with the lower socioeconomic class where the use of heroin is most prevalant. In cases involving withdrawal from amphetamines and barbiturates the addicts are taken directly to the hospital because of the fact that withdrawal from these drugs is characterized by convulsions, which can be quite dangerous.

Although we have been planning to initiate the use of methadone in our program, criteria for its use have not been fully developed and, therefore, we have not as yet begun its use. Since the use of methadone to maintain an addiction only serves to substitute a new dependence for an old, its value is still under discussion.

The value of registering addicts so that they may legally receive prescriptions for the drugs they require, as has been done in Great Britain for many years, may be in question, and the British are having some afterthoughts about it. This procedure was established in this country in the early 1920's at the suggestion of Federal narcotic authorities. Approximately 40 State and community narcotic clinics were opened to provide drugs to maintain addicts and thus prevent exploitation by the "pushers." It was believed that this program would result in the level of addiction being stabilized. However, this did not occur in this country and, in 1924, largely on advice of the medical profession, the clinics were closed down.

We now believe that our newly established comprehensive program for outpatients described in this paper, together with the halfway houses that have been established in connection with that program, along with the additional promises inherent in the Narcotic Addict Rehabilitation Act of 1966 for support of expanded facilities and programs, would appear to offer real hope in helping provide some of the tools we need badly to ensure drug addiction control.

The Drug Abuse Problem as Viewed by the Medical Clinician*

SHERMAN N. KIEFFER, M.D.†

Drug abuse presents many problems to the medical clinician. These problems range from having to keep detailed records of prescriptions for legally controlled dangerous drugs to the complex problems of treating the drug-abuser. In addition to recognizing the addict skilled in feigning pain and symptoms to elicit a prescription for narcotic analgesics the clinician must learn to recognize the potential drug-abuser and the person who has developed pathologic dependence on drugs. He must avoid giving him unnecessary drugs with or without established abuse potential and prescribe therapeutically needed drugs in a carefully controlled manner which minimizes the possibility of drug abuse.

Drug abuse—a challenge to the physician's diagnostic skills as well as to his patience—may manifest itself by physiologic, pathologic, mental, and emotional changes which may be confused with other physical and emotional illness. Overdoses and various idiosyncratic reactions may produce life-threatening medical and psychiatric emergencies. The clinician must recognize and treat various side-effects of abused drugs and illnesses which are closely related to drug abuse, such as infectious hepatitis, which may be transmitted from addict to addict via contaminated needles. Physicians have long been concerned about the human suffering, disability, death, and social disruption resulting from drug abuse.

The most difficult problem which confronts the medical clinician is how to treat the drug-abuser. The medical profession is by no means agreed as to any single proper treatment. Some, unfortunately, think that there may be as many different approaches as there are addicts. The development of effective treatments for narcotic addicts and drug-abusers is no older than our generation. Physicians and scientists have stayed away from these problems in droves. As a result, medical and scientific research has sadly neglected the fields of drug abuse and drug dependence.

We do have far more experience with the treatment of narcotic addicts than with abusers of other drugs. Prior to 1938 the medical literature on the treatment of narcotic addiction was primarily concerned with treatment of the acute abstinence syndrome. Then, Kolb and Himmelsbach[1] showed that the acute abstinence syndrome is self-limited and disappears regardless of what treatment is given, provided that the opiate drug is taken away. Controversy about the medical treatment of the acute abstinence phase has almost disappeared, but impassioned arguments still abound when the definitions of "cure" or "treatment of choice" for narcotic addicts are discussed.

The Public Health Service opened hospitals for the treatment of narcotic addicts in Lexington and Fort Worth in the mid-thirties. The programs at these hospitals represented pioneering advances at that time. Not only the acute abstinence syndrome, but the more important psychologic problems associated with addiction were to be treated. Narcotic addicts have been described as lacking internal controls, seeking immediate gratification, blaming others for their problems, easily angered and hurt, and as exploiting and manipulating others. Their life histories frequently reveal chaotic family experiences, school failure, and unstable vocational experience. Most represent formidable and intractable treatment problems.

Since 1935 almost 100,000 prisoner and voluntary narcotic addicts have received treatment at the Public Health Service hospitals. The treatment programs at these hospitals, now a part of the National Institute of Mental Health and redesignated as Clinical Research Centers, have included withdrawal from drugs, medical care, education, and vocational training. For a minority of patients they provided individual and group psychotherapy, and for all a drug-free environment under psychiatric supervision. Until 1966 the PHS had no authorization to provide aftercare for narcotic addicts upon completion of the institutional phase of their treatment. Despite extensive experience with a number of treatment approaches in the institutional phase of treatment they were unable to successfully rehabilitate most narcotic addicts becuase of the almost total absence of professional aftercare services and continued treatment in the community. Improvements made during the hospital treatment phase could not be maintained when the addict returned to the stresses of daily living in the community.

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† Associate Director for Patient Care and Director, National Center for Mental Health Services, Training, and Research, National Institute of Mental Health, 5454 Wisconsin Avenue, Chevy Chase, Md. 20015.

In 1966, however, a radical change in the Federal approach was implemented. Signed into law on November 8 of that year, the Narcotic Addict Rehabilitation Act stands as the declaration of a new national policy regarding addicts. For the first time provision is made for professionally supervised posthospital care and counseling. Furthermore, the Act provides for civil commitment of addicts, both those charged with or convicted of violating Federal criminal laws, and others not charged with any offense but voluntarily seeking treatment.

In the case of a narcotic addict charged with a Federal offense who desires to be committed in lieu of trial on the criminal charge, Title I of the Act authorizes the courts to commit him to the Surgeon General for examination, treatment, and rehabilitation. If a patient's improvement is steady he may be discharged from treatment at the end of 3 years and the criminal charges dismissed. If it is decided at some point that effective treatment is no longer possible, or if the patient returns to narcotics, civil commitment may be terminated and criminal charges resumed.

Title II provides for civil commitment of addicts already convicted of a crime. They will be committed to the custody of the Attorney General for treatment not to exceed 10 years. The Bureau of Prisons has established its own institutional programs for the treatment of Title II addicts at Danbury, Connecticut; Alderson, West Virginia; and Terminal Island, California.

Title III of the Act authorizes a Federal District Court to civilly commit a narcotic addict to the Surgeon General for treatment if the addict is not charged with any offense. Commitment is initiated on petition to the United States Attorney, either by the addict himself or by any other "related" person who has reason to believe that the individual involved is a narcotic addict. Provisions of Title III safeguard the alleged addict's civil liberties.

Title IV provides Federal support to States and communities for specialized training and demonstration programs, and for the construction, staffing, and operation of addict treatment facilities. Six community-based comprehensive narcotic addict treatment centers have been funded under this Title of the Act, in New York, Albuquerque, Chicago, St. Louis, Philadelphia, and New Haven.

In keeping with the concepts of community-based treatment, contracts for aftercare and rehabilitation services are being negotiated with appropriate facilities near the homes of the addicts committed under Titles I and III. These services have already been made available in more than 40 cities, and more than 100 patients are currently receiving aftercare services in their own communities.

Contracts provide for a flexible treatment and rehabilitation program adapted to the needs of the individual addict, including, but not limited to, vocational training, special and continued education, job placement, social casework, individual psychotherapy, group therapy, family therapy, halfway houses, day hospitals, and night hospitals. Urine testing and other examinations will be performed periodically to detect any relapse to the use of narcotics.

The primary aftercare services required are those which prevent or relieve family dysfunction, stabilize financial status, and develop the patient's ability to earn a living and cope with the stresses of daily life. The aftercare contracts provide a continuity of treatment which implements specific recommendations of the hospital staff and furnishes rehabilitative services which help the patient develop personal, social, and vocational competence.

Responsibility for the administration of Titles I, III and IV of the NARA has been delegated by the Surgeon General to the National Institute of Mental Health. Since the implementation of this law in June 1967 more than 1,100 patients have been committed to the NIMH Clinical Research Centers at Fort Worth and Lexington for examination and evaluation. Most commitments were initiated by voluntary petition of the addict.

The NARA program has just begun to function, but it gives everyone concerned in the problems of narcotic addiction a new outlook toward treatment, control, and prevention of one of man's most dismal conditions. NIMH is attempting to learn more about every aspect of drug abuse and to devise more effective means of treating its victims. It is carefully evaluating various treatment approaches, including mutual and self-help

(*Continued on page 352*)

Developmental Dyslexia

JOSEPH F. FAZEKAS, M.D., F.A.C.P.,* AND GERTRUDE M. HAUGAN, M.A.†

ALTHOUGH THE DYSLEXIC SYNDROME (inability to read) was first described 66 years ago[1] there persists considerable confusion regarding its distinction from reading difficulty secondary to emotional disorders, congenital or acquired intellectual deficits, and illiteracy due to restricted educational opportunity. The interdependence between ability to appreciate the significance of graphic symbols and the development of intellectual faculties frequently results in incorrect categorization of the individual with isolated dyslexia who is often regarded as inherently mentally defective or primarily emotionally disturbed.

Our attention was recently directed to this problem through evaluation of a series of dyslexic individuals. Although we can hardly presume to elucidate the mechanism of the disorder, it may be worthwhile to discuss the problems encountered by these dyslexics in attempting to adjust to a society where inadequate reading skill is assumed to be based upon intellectual inferiority or other social undesirability.

Three cases are presented in some detail as representative of the group; the remaining 4 subjects will be mentioned only to illustrate specific aspects of the problem.

Report of Cases

Case 1. A 34-year-old man, employed as a messenger, was referred for evaluation of his reading disability. He had been a premature infant, delivered after 6½ months of gestation, with a birth weight of 1 lb. 12 oz., but subsequent physical development was normal. He talked at the age of 1 year, walked at 14 months, and was able to recite the alphabet at the age of 2 years. After beginning school his reading difficulty became apparent and was attributed to disinterest; in fact, he was considered very bright in spite of consistently poor performances in reading, spelling, and arithmetic. Although his scores in oral examinations were invariably of a superior order, his repeated failures in written work forced him to leave school after the seventh grade. He managed to obtain several responsible positions which lasted only until his illiteracy was recognized, and he could not tolerate menial jobs because of the frustrating incongruity with his self-image. At one time or another he desperately sought assistance from physicians, psychologists, and specialty foundations, almost always encountering a total lack of understanding or, at best, a rejection because of his age.

His social adjustment was correspondingly unsatisfactory. While he regarded himself as an otherwise normal individual with a circumscribed handicap, he bitterly resented the humiliation which he so frequently experienced and therefore became adept at concealing the defect which he could not correct. He avoided situations in which his reading disability would be recognized and, when forced into them, quickly contrived superficially logical reasons for having someone else assume the reading burden. In consequence, his social relationships were severely curtailed in number and duration in order to maintain the impression that he was normal in all respects.

The patient appeared to be a personable, highly articulate individual capable of presenting various aspects of his problem with great clarity. It is understandable that the one idea which he could not communicate was the nature of his agnosia for graphic symbols. The medical and neurologic examinations revealed no overt evidence of abnormality. With regard to his specific disorder it is of particular interest that his visual and auditory acuities were normal, and he showed no disturbance in respect to position sense, stereognosis, 2-point discrimination, and right-left identification. With regard to cerebral dominance he had always been right-handed but exhibited left-eye dominance, and sinistral function was better than average. He believed that he may well have originally possessed a basic tendency to left-handedness. The only demonstrable abnormalities were the classical manifestations of developmental dyslexia.

Case 2. A 15-year-old boy was admitted to a psychiatric hospital because of a behavioral disorder manifested by repeated truancy, belligerence, and thefts. A reading problem had been recognized at the age of 7 years, and at that time he was referred for neurologic evaluation and electroencephalography, which were reportedly within normal limits. Because of his continued inability to acquire an acceptable level of reading skill he was referred for a brief period of remedial instruction. At the age of 14 years he was transferred to a vocational school, where his work continued to be unsatisfactory and his interpersonal relationships unacceptable.

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* Neurologist and internist; address: One Stockton Road, Silver Spring, Md. 20901.

† Graduate student, Department of Psychology, University of Maryland, College Park, Md. 20740.

On examination he was found to be alert, pleasant, and coöperative and exhibited no overt signs of mental deficiency, psychotic disturbance, or organic neurologic disorder. Psychologic examination revealed a low average I.Q. Aphasic testing and specific reading and writing tests demonstrated the characteristic manifestations of dyslexia.

Case 3. A 7-year-old boy adopted at 2 weeks of age was stated to have been normal at birth with no injuries or diseases prior to adoption. He had had the usual childhood diseases without complications. Physical development was normal, and coördination and motor performance were excellent. There were no emotional or behavioral abnormalities. The patient's only problem was related to difficulty in reading, spelling, and arithmetic, in which his performance was markedly disparate with an I.Q. of 130 (Stanford-Binet). In contrast to cases 1 and 2 the disorder had been recognized early to represent a specific reading disability not of emotional origin nor due to intellectual limitations.

Examination disclosed a well-developed, pleasant, coöperative child with no evidence of emotional or motor disturbances. The medical and neurologic examinations were completely within normal limits. Unlike the first patient, there was no uncertainty as to mixed cerebral dominance, the boy always having functioned as a right-handed individual. Specific tests for aphasia, reading and writing skills revealed the characteristic signs of dyslexia.

Three additional cases were recognized in a mental institution, having been referred there because of behavior abnormalities classified as due to "mental deficiency with personality disorder." One of these, an 18-year-old boy, came from an impoverished rural environment where he worked as a sharecropper with his father. He had been expelled from the fifth grade of school at the age of 16 years, presumably because of unacceptable behavior related to poor social adjustment. Following an altercation with his father (a hostile and belligerent alcoholic), he was referred for psychiatric evaluation which resulted in confinement to the mental institution. Unlike the 3 cases presented above, this patient was classified as mentally retarded because of a reported I.Q. of 70; however, it is difficult to determine whether this was an accurate evaluation in view of the handicapping and cumulative effects of lack of verbal ability on the intelligence tests in current use. In addition, he had a culturally-deprived environment, i.e., low-economic farm life and poorly-educated, socially-inadequate parents. In spite of the patient's 5 years of schooling he was totally unable to read or write anything but his own name. The father was interviewed and found to be as dyslexic as his son.

Two other dyslexic subjects confined to a mental institution were brought to our attention. They were brothers, 19 and 23 years of age, who had been institutionalized separately because of belligerent antisocial behavior. The younger brother, with an I.Q. of 86, could read only a limited number of short, 1-syllable words but was proud of the fact that his performance was superior to that of his sibling. The older boy was found to be alexic and attributed his younger brother's superior performance to a greater amount of assistance and attention.

The hereditary aspect of dyslexia is further illustrated by the case of a 7-year-old boy of Arab extraction who was referred for evaluation because of reading difficulty. Examination disclosed a pleasant and alert child with no evidence of neurologic disease and an I.Q. of 90. The mother volunteered the information that of her 5 children the 2 girls were the only ones who had been able to read and write with normal facility; the 2 older brothers of the patient (11 and 17 years old) were both severely dyslexic despite intensive educational efforts. The mother attributed this problem to consanguinity in her marriage, her husband being her first cousin.

Test Results

In all cases, tests for dyslexia revealed characteristic aberrations. The older subjects were able to recognize simple 1-syllable written or printed words although identification was slow and required much concentration. Polysyllabic words were virtually meaningless to them, and they were unable to analyze them for pronunciation purposes, even though they customarily used these words with normal facility in conversation. The younger children, as might be expected from their briefer educational experience, were not even able to recognize 3-letter words, such as "cat" and "dog." None of the patients were able to pronounce an unfamiliar word on the basis of its phonetic structure. In a short sentence the less severely limited were frequently able to approximate or arrive at the verbal significance of words which they could not read on the basis of relationship to the context of simpler words.

Letter-order reversals in short words ("saw" for "was," "no" for "on", etc.) were common, as were both word interchange in phrases and linear dyslexia in which terminal words from adjacent lines would be interchanged. The patients frequently inverted letters (e.g., "m" and "w") and reversed letters (e.g., "b" and "d"). The less affected subjects showed marked bradylexia with frequent subsititions and other inaccuracies. They were often unaware of the presence of a word in a simple sentence, distorted the word sequence, or lost retention of several words by the time a coordinating word was recognized.

In view of the difficulties with alphabetic characters it is not surprising that simple arithmetic was also difficult, the patients having the same inability to appreciate the significance of numerical symbols. None of the subjects had any problems with color recognition, but most exhibited some disturbance in spatial conceptualization on specific testing.

Discussion

In all of these subjects one cannot exclude the possibility of an acquired disorder having its unrecognized onset at some time between birth and the beginning of their education. However, since dyslexia acquired after reading ability has been established (due to trauma, vascular disease, or tumor) is invariably associated with other neurologic deficits, the isolated disorder in our patients seemed to be most likely congenital in origin. Furthermore, not even the institutionalized subjects presented evidence of a severe emotional disorder which might suppress an existing reading potential. On the contrary, the spontaneous verbal performance of these subjects revealed a grasp of language consistent with their cultural environment. Indeed, this last consideration in those subjects reared in an intellectually impoverished environment rendered extremely difficult the distinction between primary mental deficiency and retardation secondary to dyslexia. However, we have the impression that, given the same educational efforts, the inherently dull individual can be made to achieve a reading skill superior to that of the dyslexic in whom an unfavorable environment coupled with his disability may produce an identically low I.Q.

Although the concept of "congenital word blindness," "specific reading disability," or "developmental dyslexia" is well established,[1, 2] it would appear that normal individuals tend to have as much difficulty in understanding this disorder as does the dyslexic person in conceptualizing graphic symbols. Familiar analogies may be of uncertain validity, but one may assume that the written word remains as meaningless to the dyslexic person as does Oriental calligraphy to the Western eye.

The isolated defect in this disturbance of intellectual function precludes the elucidation of its origins or disclosure of the abnormality through other than direct demonstration. Various investigative modalities have been unrevealing and even misleading. Neuropathologic[1] and electroencephalographic studies[2] have disclosed no objective abnormality. Finally, associations with a variety of minimal-to-minor psychologic and neurologic dysfunctions have been reported, such as difficulty in arithmetical symbols, spatial concepts and handedness, but the relationships are not consistent. There is, however, usually a family history of reading difficulty, and the disorder is more common among boys than girls, with ratios reported from 4:1 to as high as 8:1.[3]

It is by no means inconceivable that dyslexia may exist in many grades of severity, as suggested by Critchley,[1] ranging from striking examples of alexia to incomplete forms much more difficult to recognize. Many educators appear to be unaware of the syndrome, and the design of available intelligence tests does not take into account the possibility of a specific reading disability. Inasmuch as such testing assumes that the level of acquired information is related to intellectual capacity alone, it does not disclose deficits actually due to reading disability. In consequence, psychologic tests can be considered reliable in distinguishing primary mental deficiency from that which may be secondary to dyslexia only in younger children who are not expected to have acquired information through graphic communication. It is therefore important for differential diagnosis to estimate native intellectual capacity as soon as reading difficulty becomes apparent.

Treatment

Considerable interest is being engendered by psychologists and educators in the area of special learning disabilities. Students with developmental dyslexia are often grouped with those having other causes for their learning difficulties because of the prevailing opinion that symptoms rather than diagnosis should direct the treatment. We believe that early and precise diagnosis is of utmost importance and that neurologic and psychologic evaluation is mandatory for all individuals having reading problems. The family should be acquainted with the true nature of the disorder so that dyslexic children will not be identified with the mentally retarded and the psychologically disturbed. If emotional disturbances secondary to dyslexia become manifest, appropriate therapy should be instituted immediately. As in Denmark where an institution for the "word blind" was established in 1935[4] special educational facilities designed exclusively for dyslexic children should be provided if sufficient numbers of such cases are uncovered.

There is considerable uncertainty regarding the optimum teaching modalities for dyslexia, and a generally accepted remedial approach has yet to be devised. A variety of techniques have been advocated, and variable success has been reported.[5,6] Recently industry has become interested in developing programmed instruction for slow learners in various specific areas, based on contingent reinforcement principles. Although educators believe that the method must be tailored to the individual needs, in general the techniques employed include the combined use of visual, auditory, tactile, and kinesthetic senses to enhance symbol recognition. This involves looking at a letter or word, tracing it with the fingers, and speaking it aloud. In Denmark[4] remedial techniques include the study of speech sounds and how they are produced. In addition, letters are given different colors according to phonetic usage, enabling the student to work out the spelling of words phonetically and their division into syllables. Special materials to teach inflection, special books for retarded readers, and devices for auditory reinforcement have also been designed.

Reports in the literature indicate that if specific dyslexia is diagnosed at an early age and remedial therapy begun immediately the outlook is not hopeless, and these individuals can achieve a minimal to substantial reading skill.[5, 7, 8] In a follow-up study of 541 graduates from the Copenhagen Word Blind Institute,[9] it was reported that 346 had either gone on to higher education or had entered various skilled or professional occupations; 145 were in unskilled jobs; 17 were unclassified, and only 33 were unemployed.

Certainly, research directed toward a better understanding of the neurophysiologic basis of dyslexia deserves encouragement because of the possibility that similar mechanisms may underlie various clinically analogous syndromes, such as other perceptual disorders.

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Medical Students' Awareness of Psychologic Factors: An Exploratory Study*

PAUL R. ROBBINS, Ph.D.,† AND HERMAN A. MEYERSBURG, M.D.‡

IT HAS BEEN STATED frequently that physicians should be aware of the importance of psychologic factors in their medical practice.[1] The fact that certain diseases may be psychosomatic, that the patient's attitudes and anxieties will bear on the success of treatment, and that the physician's own behavior has therapeutic value are some of these factors. The importance of psychologic factors is such that the National Institute of Mental Health is awarding training grants to medical schools to increase the physician's understanding of them.

Perhaps the most strategic place to begin such instruction is the undergraduate medical curriculum. Ideally such teaching should be part of the instruction in clinical medicine. There has been increasing interest in developing ways for carrying out such instruction.[2, 3, 4] In designing effective programs it would be useful to have more knowledge about the attitudes that medical students hold about the role of psychologic factors in medicine and the variables that influence these attitudes. The present research was undertaken to obtain such data.

The context of this research was the treatment of the chronically ill patient. This is an area in which one would expect psychologic factors to be perceived as relevant. Our first question was to what extent does the medical student view psychologic factors as important in the care of such patients. Second, how are these attitudes influenced by contact with chronically ill patients and particularly by the student's first real experience in the care of patients? Third, what effect would psychiatric participation in the teaching of clinical medicine have on the student's attitudes?

Procedure

Subjects for the research were third-year medical students at the George Washington University School of Medicine. The students had completed courses in the basic sciences and physical diagnosis, and were just beginning a course that would give them their first sustained contact with, and responsibility for a patient.

The method of data gathering was the questionnaire.§ Questionnaires were administered to the students near the beginning of the course and shortly after the course was completed. Of 80 students contacted 53 (66 per cent) returned the first questionnaire and 40 (50 per cent) the second. Obviously, there may be sampling biases in these data, and caution should be exercised in interpreting results, particularly for the second questionnaire.

Results

Perception of the chronically ill patient. Students were asked: "What are the things that come to mind when you think of the chronically ill patient?" Some randomly selected replies were:

> "Psychologic complications, failure of patients to maintain treatment, financial problems, loss of income, and medical expenses."
>
> "How to render comfort and hope for recovery; also how to manage the patient so that he might adapt to his environment as well as possible."
>
> "Do they appear their stated age? How has it affected their personal lives (economic loss)? What effect psychologically? How to make effective impressions in terms of patient-doctor relationship since there probably was a long line of predecessors treating this person without any apparent success."

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† Psychologist, Department of Psychiatry, George Washington University School of Medicine; address: 1101 New Hampshire Avenue, N.W., Washington, D. C. 20037.

‡ Clinical Professor of Psychiatry, George Washington University School of Medicine, 1331 H Street, N.W., Washington, D. C. 20005.

§ Some questions used were open-ended in nature; e.g., "What are the most important things that you would consider in your care of any chronically ill person?" For these questions a coding system was developed empirically from the data and used to classify the responses. To check on the objectivity of the system, 2 analysts coded a random sample of the data independently. Agreement as to when a coding was present for a case was 70 per cent.

The responses that emerged tended to cluster into 4 categories: problems in medical management; economic and social problems; psychologic and psychiatric problems; and a feeling of helplessness or futility on the part of the physician. The most frequently mentioned category (brought up by 74 per cent of the students) was psychologic and psychiatric problems of the patient, even more than medical problems (59 per cent). Economic and social problems were a distant third (28 per cent), while the physician's reaction of helplessness was mentioned only a few times (9 per cent).*

Several direct questions were asked about the role of the patient's psychologic processes. One question was: "How important would you say the patient's own attitude about his condition is in the treatment of his chronic disease?" Three alternatives were given: little importance, some importance, and great importance. Without exception all 53 of the students picked great importance.

A second question was: "How often do you think in terms of psychologic factors as contributing causes when you see chronically ill persons?" Four alternatives were presented: practically never, once in a while, often, and most of the time. Only 3 students chose the first 2 alternatives, while all the rest (94 per cent) chose either 'often' or 'most of the time.'

The responses to these several questions suggest that the students showed a strong psychologic orientation in their view of how to approach the care of the chronically ill medical patient.

The effects of patient contact on attitudes. During their first 2 years of medical school the students had intermittent, sporadic contacts with chronically ill patients. They were asked: "About how many patients have you had contact with that have a chronic illness?" Responses ranged from 1 to 125, with a median of 5. The students were dichotomized at the median—the upper half being considered the relatively high-contact group, the lower half the relatively low-contact group. The 2 groups were then compared in terms of their responses to the question: "What are the things that come to mind when you think of the chronically ill patient?" (table 1).

There was some tendency for the high-contact group to mention medical factors more frequently and psychologic factors less frequently than the low-contact group. These differences, however, would not be statistically significant with the size of sample used.

Effects of first sustained patient contact on perceptions. Table 1 considered the effects of casual, intermittent contact with chronically ill patients.

TABLE 1: Influence of Patient Contact on Perceptions of the Chronically Ill

Areas Mentioned	Per cent in High Contact Group (N-26)	Per cent in Low Contact Group (N-27)
Medical problems	69	48
Psychologic problems	65	81
Economic and social problems	23	33

The present analysis deals with effects of the student's first sustained contact with a patient. When the students were given the first questionnaires they were beginning a 3-month course in which they would have their first long contact with a chronic patient. To assess the effects of this experience, a follow-up questionnaire containing some of the questions used previously was given to the students after the course was completed.

One of the questions repeated was: "What are the things that come to mind when you think of the chronically ill patient?" The analysis used the same categories as before. Table 2 compares the initial and follow-up responses. It can be seen that the initial tendency—more frequent mention of psychologic than medical factors—was if anything increased by the experience of first patient responsibility. One might conjecture from these data and those of the previous table that the effects of sustained contact with patients are different from those of casual contact. The hypothesis suggested is that casual contact would be followed by a more medically oriented focus and sustained contact by a more psychologic focus.

TABLE 2: Initial and Follow-up Views of the Chronically Ill Patient

Areas Mentioned	Per cent on Initial Interview (N-53)	Per cent on Follow-up Interview (N-40)
Medical problems	59	33
Psychologic problems	74	67
Economic and social problems	28	33

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* A similar picture was elicited from a further question: "What are the most important things that you would consider in your care of the chronically ill person?" The most frequently mentioned category of response was psychologic management (79 per cent of the students).

Perception of psychologic factors in their patients. Table 2 deals with the generalized perception of the chronically ill—the abstract case. Did the medical students actually see psychologic factors as operative in their first patients?

First, we asked: "Considering the patients you have, do you think that psychologic factors play a pathogenetic role in the disorders of any of them?" After this question there was a probe: "If yes, please explain briefly." Seventy-six per cent replied "yes." The most frequently noted factors were problems in family relationships and the home situation.

Next we asked: "Have you noticed any emotional problems or difficulties in your patients that appear to stem from their illness?" "If yes, what are these?" Sixty per cent responded "yes." Some of the reasons given were: The patient was concerned about possible disabilities and limitations caused by the illness; he used the illness as a crutch or defense; and there were family and social problems caused by the illness.

Finally we asked: "Have you noticed any signs that your patients were developing feelings of dependency toward you?" Seventy-one per cent of the students replied "yes."

One may conclude from these data that the students appeared to be sensitive to a range of psychologic problems in their first patient.

Effects of psychiatric participation in teaching. During the course in which the students had their first patient responsibility psychiatric consultation was made available in 2 of the teaching sections. In one of these a psychiatrist and a psychologist participated, and in the second only a psychiatrist participated. These instructors gave several lectures and took part in class discussion, attempting to focus the student's attention on psychologic factors. The psychiatrists were also available for consultation with the students. We predicted that this psychiatric involvement would tend to influence students to view chronic patients more frequently in terms of psychologic factors. A test of this prediction was made by comparing these 2 sections with 2 other sections in which psychiatric personnel did not participate.* We used the question: "What are the things that come to mind when you think of the chronically ill patient?" Surprisingly, the groups having a psychiatrist participate in the teaching process were somewhat less likely to mention psychologic factors than the other groups. Fifty-six per cent did so in the psychiatrist-participant groups versus 74 per cent in the other groups. Table 3 presents these data. The 2 groups also differed somewhat in the way they answered the question: "What steps, if any, would you take when you develop 'psychologic hypotheses' about a patient's illness?"†

TABLE 3: Steps Taken When Holding Psychologic Hypotheses as a Function of Psychiatric Participation in Teaching

Steps Indicated	Groups With Psychiatrist Present (N-16)	Groups Without Psychiatrist Present (N-23)
	Per cent	*Per cent*
Referral to a psychiatrist	38	13
Conduct own psychologic evaluation	38	65
Thorough medical workup	13	35

There is a suggestion that the groups with a psychiatrist present were more likely to think in terms of using specialized consultation, while the other groups seemed more likely to attempt to deal with the patient's problems themselves.

The 2 groups were also compared on the questions asking about their perceptions of psychologic factors in the patients they had followed through the semester. Once again, contrary to prediction, the sections having the psychiatrists available were no more likely to attribute a significant role to psychologic factors. For example, in response to the question, did they think psychologic factors played a pathogenetic role in their patients, 60 per cent of the group with psychiatric teaching said "yes" as against 86 per cent of the other students.

Could these findings be due to a possible sampling bias? It would take a considerable reversal of this tendency in the non-respondents to verify our predictions. Our tentative conclusion therefore is that limited psychiatric involvement with students did not have the intended effects on the students' perceptions of chronic patients.

Discussion

In interpreting the findings of this study certain limitations should be kept in mind. First, the questionnaire itself is only of limited value as a means of gathering data. Second, the data were obtained on students from a single medical school. Third, there is the already mentioned problem of possible sampling biases in the students who did not return the questionnaire.

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* The 2 sections receiving limited psychiatric instruction were combined for purposes of analysis and compared with the rest of the students. Data were from the follow-up questionnaire only.

† Because these trends were opposite to that predicted the hypothesis was rejected without further statistical test.

Our first question concerned the attitudes third-year medical students hold about psychologic factors in the treatment of chronic illness. The data seem surprising because they indicate that the students had developed a strong psychologic emphasis. These findings, however, are consistent with an observation made by Krauss.[5] He taught geriatrics to medical students for some years, emphasizing a comprehensive approach, noting that medical students in recent years are more receptive to a comprehensive view than their predecessors.

The suggestion from our data, that students with cursory contact with chronic patients tended to develop a medical focus while sustained contact seemingly produced a more psychologic focus, should be followed up in subsequent research. Probably the most simple rationale underlying this hypothesis is that in brief contacts the student would not have the time to delve into psychosocial factors.

The effects of limited psychiatric participation in teaching were unanticipated and rather curious. The presence of psychiatrists and psychologists did not increase the student's sensitivity to psychologic factors in a measurable way. If anything, students were less disposed to bring up those considerations both in their abstract descriptions of the chronically ill patient and in their assessment of their own patient. How can we account for these findings? One possibility is that the patients seen by the groups in which psychiatrists were not present constituted a population with more psychologic problems. If this were so, these students could have been influenced by differential reality factors. At present there is no way to rule out this possibility. A second line of explanation is that the degree of psychiatric participation was not intensive enough to have the desired effects. Some credence for this possibility is provided by a study by Tucker and Reinhardt[6] who found that young physicians "with favorable attitudes toward psychiatry had had significantly more exposure to psychiatry . . . in medical school." Further support is provided by Cheifetz et al[3] who administered attitude scales dealing with physician-patient problems to senior medical students prior to and after a 6-week clerkship in psychiatry, designed to influence general attitudes rather than teach technical skills. These students showed a positive shift on the attitude scales while a control group did not. We note that students in the Cheifetz study had more intensive psychiatric exposure than ours (5 half-days a week for a period of 6 weeks as against 1 half-day per week for 3 months).

A third possible line of explanation for our negative findings is that the students having already had a rather strong psychologic emphasis reacted to further teaching along these lines with "resistance." They may have felt that 'enough is enough' and it was time to concentrate on medicine. Such resistance could negate both the immediate and longer range effects of the message one is trying to communicate.[7]

As to implications for medical education, our data would indicate that the groundwork for the teaching of psychologic medicine ostensibly is laid in the earlier training of the medical student. The opportunity for more advanced teaching seems available when the student enters into his clinical training. What would be most beneficial to teach at this point? We suggest emphasizing the dynamics of the clinical relationship between the patient and the physician and the pathogenetic impact of psychologic factors in the medical illness.

Our data on the effects of introducing psychiatrically oriented teaching at this stage of clinical medical contact suggests that such a program requires very careful planning if it is to be successful. The contrast between our results and those of Cheifetz et al[3] suggests that one element in such planning would be the requirement of a major investment of psychiatric time.

The assistance of Michael Miller in carrying out this study is gratefully acknowledged.

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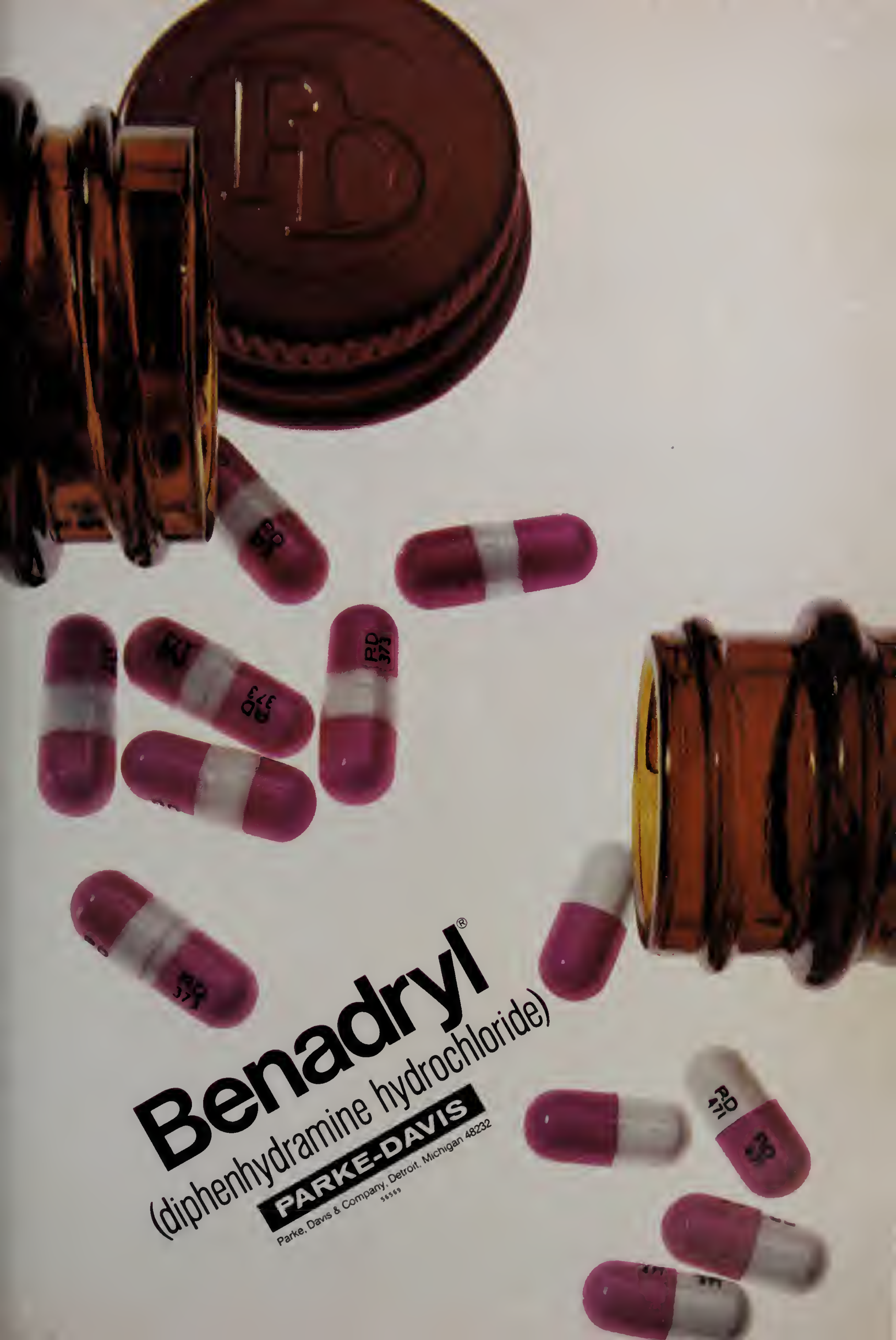
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Many clinicians have achieved a high degree of success in treating trichomonal vaginitis only after they have recognized the importance of sexual partners in perpetuating the infection. Crowley* has asserted, "it was not until we acted on this key premise that we were able to obtain positive and lasting results in our management of recurrent vaginal trichomoniasis."

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Dosage and Administration: *In women:* one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.

In men: When trichomonads are demonstrated, one 250-mg. oral tablet twice daily for ten days in conjunction with treatment of his female partner.

Dosage Forms: Oral tablets—250 mg.
Vaginal inserts—500 mg.

*Complete list of references on request.

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President's Page

REMEMBER THESE DATES—SEPTEMBER 24, 25, 26

September twenty-fourth, twenty-fifth and twenty-sixth will be memorable dates in the history of the Medical Society of the District of Columbia. On these days an outstanding scientific program will be presented to members and their guests.

The General Chairman, Dr. Louis Gillespie, and his Program Committee, led by Dr. Nathan J. Zvaifler, were charged to bring medical leaders with the latest information on important medical subjects to Washington. Dr. Zvaifler has been ably assisted by Drs. Philip J. Ferris, Edward E. Cornwell, Jr., John S. Dillon, George A. Kelser, Jr., Robert F. Donohoe, Christopher M. Martin and Karl Jonas. No physician can afford to miss the program they have prepared.

At the session on the intriguing subject, "What will medicine be like in the 1970's?" current information on computers, genetics, and artificial organs will be provided by such authorities as Mr. Thomas Fleming, President of Scientific Resources; Dr. Willem Kolff, of the University of Utah, and others. A panel on Coronary Artery Disease will emphasize predisposing lipid abnormalities, the role of coronary arteriography in diagnosis, and new surgical approaches to the treatment of coronary artery diseases. Each panelist is a leader in his field.

Diagnostic uses of radioactive isotopes will be handled by such experts as Drs. Richard Wetzel, Giovanni DiChiro, and August Miale.

A Symposium on Pulmonary Embolism and Infarction has been arranged. Drs. Duncan Thomas, Arthur Sasahara, Henry Wagner, Jr., and others will provide the latest information on the etiology, association if any with oral contraceptives, the clinical diagnosis, and medical and surgical treatment.

Listeners will be brought up to date on the problems and management of diseases of the colon and rectum. Inflammatory diseases of the colon will be discussed and the tricky problem of "carcinoma and diverticula" explained.

The Scientific Exhibit, under the supervision of Dr. James R. Snyder, promises to be of high calibre.

Also, there will be luncheons and enough special events to keep everyone busy each day. The Awards Luncheon on the first day and the Annual Banquet on the last evening, under the able supervision of the Woman's Auxiliary, will be outstanding social events.

Remember the dates of the Annual Scientific Assembly of the Medical Society of the District of Columbia—September 24, 25 and 26, 1969. Be there! Your time will be well rewarded. All sessions will be at the Mayflower Hotel.

Frank S. Baer

Editorials

Drug Abuse—An Increasing Problem

The victims of the drug abuse problem were limited to small numbers until recent years. Ever-increasing portions of our population are now being enveloped in the tentacles of this vicious blight on our civilization.

In addition to the narcotics, marihuana, barbiturates, LSD and its derivatives, stimulants—in fact, almost any substances that can be injected, ingested or inhaled—are being used for other than therapeutic purposes. Euphoria, "flights," "highs," "trips" are being sought in deliberate efforts to escape reality, and refuge is obtained in the make-believe world of drug addiction. Psychic and physical dependence are routine consequences. Diseases such as hepatitis from virus-infected needles are seen with increasing frequency.

All of these drugs present serious problems when improperly used, but the narcotics, opium and its derivatives—heroin, morphine, and others—are particularly important. The illegal use of heroin is not limited to the poor, the hardened criminals, or the unfortunate pain-sufferer. Today, members of the affluent society and their children in junior and senior high schools, private schools, colleges, in addition to the hippies and beatniks, are falling victims to this scourge.

Well over half of the male and three-quarters of the female prison population in the District of Columbia have definite histories of narcotic addiction. A $50-a-day habit can very soon bankrupt the average family. Resort then must be made to theft, prostitution, or other illegal activity to raise the sum necessary to continue this path to misery and despair. The recent great increase in crime in this locality has been attributed directly to the increasing traffic in narcotics and other drugs.

The District of Columbia is making great efforts to lessen the impact of this blight on our city. Our Health Department is expanding treatment facilities, operating the Drug Addiction Treatment and Rehabilitation Center, and initiating a Methadone Maintenance Program on an experimental and research basis, with emphasis on strict professional control. The Metropolitan Police is increasing its Narcotics Squad from 22 to 32 officers, and concerted efforts are being made to eliminate the sources of supply and distribution of illegal drugs.

The health, humanitarian, social, and economic problems in our community must be recognized and every attempt utilized to improve our milieu and help lessen the toll that drug addiction is now taking.

Physicians can be of great assistance in the program of educating our population. The hazards should be explained in a matter-of-fact manner and the young and old made aware of the tragedy that is occurring in our midst.

Your attention is invited to the articles on this subject in this issue. The authors are local men of national repute who are knowledgeable in this field. The D. C. Medical Society's Interdisciplinary Committee on Drug Dependency solicits your help. Improved education on the hazards involved is an essential phase of our concern. Participation in the professional planning of new treatments is our duty as physicians. Taking part in community planning is our duty as citizens. Coöperation by all concerned will enable us to lodge a frontal attack on the narcotic addiction and drug-abuse problem in the Nation's Capital.

Seymour Alpert, M.D.
Chairman, Interdisciplinary Committee on Drug Dependency

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Organs for Transplant—A Final Contribution*

The National Kidney Foundation would like to share more widely its deep concern for the victims of advanced renal disease for whom not 1 but 2 therapeutic modalities have been developed as a result of sustained and brilliant medical research in this field. Some 28,000 Americans die annually of primary kidney disease and more than twice that number from hypertensive disorders, many of which are directly related to or ultimately produce terminal renal failure.

Even though the strictest medical criteria for age and patient selection are applied, upwards of 8,000 "ideal" patients die each year in the U.S. from terminal uremia. This year, less than 1,000 of these will have treatment and 7 out of 8 will be left to die.

Transplantation of the kidney is not new, but recent results have been most heartening. Yet today the application of this therapy is extremely limited, not because of lack of technical competence or medical knowledge but mostly because of a lack of willpower to mobilize the necessary resources.

Physicians should be in the forefront in carrying identification cards and volunteering the use of their organs after death. Even those physicians who have no personal stake in the care of patients with kidney disease can perform a great personal service by letting their community know that they personally are in favor of harvesting all cadaver organs which can be made useful as a result of technologic progress.

Testamentary disposition of one's organs is the finest of human acts. It renders biologic death less negative and enables both physician and patient to make one additional contribution to humanity.

George E. Schreiner, M.D.
President, National Kidney Foundation

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* From Letters to the Editor: Medical World News, April 11, 1969, page 9. Reprinted by permission of Medical World News, ©1969, McGraw-Hill, Inc.

Cardiac-arrest Tragedies*

When a patient suffers a cardiac arrest during surgery the resulting courtroom complications are apt to rival those in the operating room. This is particularly true if massive brain damage leaves the patient in a vegetative state.

Legal liability in these instances is by no means automatic, but the odds are high that a claim for damages will be made and that a suit will be filed if the claim isn't settled out of court. The surgeon or the anesthesiologist, or both, are the usual targets.

If the suit goes to trial, liability will depend on whether there is sufficient expert testimony to permit the court or the jury to find that the brain damage was caused by the professional negligence of one or more of the participating medical practitioners. If damages are awarded, they are likely to be astronomical, since they will include, among other elements, the estimated cost of future care for the patient.

The legal consequences of unfortunate incidents of this sort are exemplified by 3 cases decided by the courts in recent years. In all 3 instances one of the principal contentions was that professional negligence resulted in failure to restore circulation before brain damage occurred.

These decisions illustrate 2 important facts of life in the legal aspects of medical practice: First, the risks of an adverse decision are very high when medical treatment has a tragic and unexpected outcome. Second, every medical practitioner must, at his peril, be professionally competent and adequately prepared to cope with the complications that are known to occur in the procedures he undertakes.

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►HEALTH DEPARTMENT NOTES

Smoking and Health

Employes of 4 Federal agencies with offices in the General Accounting Office Building began attending regular smoking-withdrawal meetings in the GAO Auditorium in January. The Interagency Council on Smoking organized the program at the request of employe associations of the Federal Power Commission, the Maritime Commission, the U.S. Treasury, and the Bureau of Labor Statistics. The agencies grant administrative leave to employes who attend the sessions.

Among the speakers heard by the 150 participants have been Daniel Horn, Ph.D., Director of the National Clearinghouse on Smoking and Health, and Simon McNeely, of the President's Council on Physical Fitness and Sports. During one session the participants took insight development tests, designed to reveal previously unrecognized psychological motivations to smoke.

Computerized equipment to measure lung function was made available to participants in these sessions by the U.S. Public Health Service in the GAO Building. Indications of a potential lung abnormality were found in 37 per cent of the 89 participants who took the spirometry tests. When these computerized tests point to a potential medical problem, it is suggested that the individual visit a physician for further diagnosis and study. The spirometry procedure will be repeated for those persons who have stopped cigarette smoking since taking part in the program.

By the end of February certificates had been awarded to 37 participants who had already quit smoking cigarettes. Most of those who quit are continuing to participate in the program to strengthen their personal resolve and to increase their knowledge of the health hazards of smoking.

The Interagency Council was established in 1965 with a Federal grant following the initial Report of the Surgeon General on Smoking and Health. The D.C. Department of Public Health, which houses the Council staff, and 9 other agencies joined together to develop and promote programs on the relationship of cigarette smoking to health. The Council hopes to achieve a significant reduction in deaths and illnesses in which cigarette smoking is a major factor. The Council initiates and supports administrative policies and legislation concerning smoking-induced health hazards and provides the public with scientific data on the potential physical damage from the cigarette habit.

The withdrawal meetings at the General Accounting Office Building are an example of the programs planned by the Council to inform the individual smoker. In order to reach the young people before they become smokers, the Council has developed and distributed the "Teachers' Kit on Smoking and Health" for use in the fifth and sixth grades of District public and parochial schools.

The kit offers guidelines for fitting the educational material on the health hazards of cigarette smoking into the regular classroom curriculum. Instruction based on the kits is expected to reach a potential audience of 40,000 pupils at an age level when cigarettes represent the sophistication adolescents consider important.

Physicians, who see many individuals with medical problems induced or aggravated by the cigarette habit, are in an ideal position to encourage patients to control cigarette smoking. Groups interested in setting up programs similar to that at the General Accounting Office Building may call the Interagency Council on Smoking at 629-4101. Information and printed educational materials on smoking and health may be obtained by calling this number. Printed materials for dissemination through your office are also available.

Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

Drug Dependence—Codeine

Codeine (sometimes called Schoolboy) is a component of opium and a derivative of morphine. In most respects it is a tenth or less as effective as morphine, dose-wise.

Usually codeine is taken orally, in tablets, for pain or in a liquid preparation, of variable alcohol content, for cough. It can be injected. It is effective as an analgesic and cough suppressant, with very little sedation or exhilarant (euphoric) action. Dependence can be produced or partially supported, but large doses are required and risk is minor.

Unless taken intravenously there is very little evidence of general effect. Large doses are morphine-like.

Occasionally codeine is taken (in liquid preparations) for "kicks," but a large amount is required. Contribution of the alcohol content to the effect may be significant. Degree and risk of abuse are very minor. Occasionally it is resorted to by opiate-dependent persons to tide them over, with inadequate result.

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Community Health Research in the Greater Washington Area*

CHARLES R. HAYMAN, M.D., M.P.H.,† AND HENRY I. HOFFMAN, Ph.D.‡

THE RAPID PACE of our social and economic changes has had an enormous effect on medical practice. Not the least of these is the awareness of the valuable contributions that can be acquired by using the results of social science and administrative research. However, the present exchange of information between health professionals and such researchers is very limited. Physicians as well as paramedical personnel have neither the time nor the inclination to read the journals of psychology, sociology, or management. Moreover, personal contact with these investigators is usually on a casual basis, at large conventions. Yet these researchers have studied, sometimes in depth, the attitudes and responses of individuals and groups of people toward medicine as a whole, toward specialized practice, and toward preventive measures, as well as patients' and non-patients' emotional responses to detection and treatment of acute and chronic disease and the promotion of health.

In the Washington Metropolitan Area, as elsewhere, health programs suffer from this inadequate exchange of information between researchers and those who should apply research findings toward the improvement of community health. Since April 1, 1967, with the help of a United States Public Health Service Contract, we have studied this serious deterrent to the maximal delivery of health services.

The primary objective is to demonstrate that research can be of direct help in solving some of the questions facing program planners, administrators, and other health practitioners.§ For our purposes we have defined "community health" to include the status of population groups as a whole, the condition of healthy people as well as sick ones, and the status of the environment.

Our definitions of "community health research" include any efforts designed to develop a procedure to the point where it can be used to improve the health of the community or to test the utilization of a procedure or facility. We are not concerned with research primarily of a clinical or technical nature unless it holds great potential for the delivery of health services.

The first step in our project was to undertake a survey of administrative, behavioral, motivational, procedural, psychological, and similar research projects underway in the Greater Washington Area. Geographically this means the District of Columbia, Montgomery and Prince George's Counties in Maryland, and Alexandria City, Arlington, Fairfax, Loudoun, and Prince William Counties in Virginia. The survey was launched by mailing a summary of the project definitions, questionnaires, and instructions to 402 organizations. Out of the mailing total, 155 did not reply, 160 stated they were doing no research, and 87 organizations returned 218 fact sheets with the name of researcher, title and brief summary of his work. Some individuals were carrying out several researches concurrently.

The responses were checked against 6 other information sources, namely, the District of Columbia Department of Public Health's report on intramural research; the Department's survey of all medical research in the District of Columbia; Grant Indices of the U.S. Office of Education, Public Health Service, and Vocational Rehabilitation Agency; a special search by the Science Information Exchange; and a report from the Washington Area Round Table.

Some telephone calls and a few site visits were made when the written reply needed clarification or when no reply came from a known researcher. The total effort produced an inventory of active research conducted by about 200 investigators working for organizations in the fields of economics, education, health, planning, sociology, and welfare. The investigators were employed by Federal, State, and local governments, voluntary associations, private foundations, and commercial enterprises.

We found that administrators of organizations were often unaware of the research conducted by their staff workers and it was difficult to contact the researchers directly unless one knew them or their work. A great deal of what was called "research" did not, in our opinion, qualify for that title. Much research having direct relevance to health was accomplished by sociologists and others working on education, welfare, and other matters. Lack of funds prevented wide distribution and updating of the survey. Thus only a few researchers obtained and were able to use the data.

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* Part of this paper was presented at the Annual Meeting of the American Public Health Association in Detroit, Mich., November 13, 1968.

† Director, A.P.H.A. Project; Associate Director for Preventive Services, District of Columbia Department of Public Health, Washington, D. C. 20001.

‡ Administrator, A.P.H.A. Project, 1400 Spring Street, Silver Spring, Md. 20910.

§ By health practitioners we mean persons delivering health services to individuals, groups, or the whole community. They include physicians, nurses, environmental engineers, program and facility administrators.

Our second step was to form an advisory committee representative of the area's geography and organizations, health disciplines, and interests. The Committee has been very active in both the planning and execution of our activities. Its deliberations with the staff have been a major by-product in bringing together a knowledgeable, interested group at regular intervals to discuss important problems pertaining to the community.

The next step was the organization of the first conference. The primary objective was to gather together health researchers to effect an interchange of communications and to discuss their current activities in relation to problems facing health practitioners. From information obtained in our survey 52 researchers were selected. They represented 35 different organizations and 20 different professional disciplines. Most of them were not full-time research workers. In addition, there were 35 health planners, administrators, and members of the advisory group. The Conference was held for 1½ days in October 1967 at a conference center 40 miles from Washington.

A few of the major points brought out were the isolation of many of these researchers from each other, their lack of awareness of community health research in the area, and their separation from local problems of concern to service organizations and administrators.

A careful system of pre- and post-conference evaluations indicated that most of the researchers felt the need to remedy these defects. They wished to explore possible solutions by direct confrontation with the service persons responsible for putting research findings into use. Our follow-up disclosed individual meetings between several researchers who had not met before the Conference.

On the basis of the recommendations from the first conference and with the help of our Advisory Committee, we planned the second one for March, 1968. The purposes of this seminar were to learn what the major problems are which face practitioners in the delivery of health services; which of these problem fields may profit from the application of administrative and social research findings; whether service personnel are aware of research which may be of use in solving their problems; whether researchers are aware of the problems facing planners and administrators and are directing research toward possible solutions; and whether direct contact between researchers and practitioners may lead to mutually beneficial results.

We began by inviting a number of planners and administrators engaged in the delivery of health services in the Greater Washington Area. These represented the area's hospitals, medical schools, voluntary health organizations, health departments, group practice, elected government officials, legislative aides, and health consumers. A number of attempts to involve private physicians through the local medical societies were relatively unsuccessful. The 36 health practitioners came from 11 different disciplines, particularly medical and other health facility administrators. They were representative of the geographical areas. A questionnaire was sent to the invitees from which we learned about their major problems. We then selected the topics they most wanted to discuss.

Twenty-one researchers were then selected by the staff and Advisory Committee. They were individuals who were or had been engaged in research on one of these problems or were generally knowledgeable of the active research in these fields. The 21 came from 15 different disciplines, the largest number being psychologists and health economists. They represented 8 different types of institutions such as the U. S. Public Health Service, private research organizations, and universities.

Our careful system of conference evaluation included the pre-conference questionnaire used as a baseline, another questionnaire completed at the end of the conference, and a later questionnaire completed by all participants within the following month. We also obtained narrative reports from our observers and evaluators and from most of the direct participants. Judged by all these measures the objectives of the Conference were all achieved.

Through our pre-conference questionnaire we uncovered the main problems facing our practitioners in the delivery of health services. They are: personnel recruitment and retention, financing, communications among professionals and between professionals and consumers of health services, and the problems of trying to expand services to meet the needs and demands of the people.

Many responses indicated the Conference had met with success because it provided a stimulated and stimulating exchange of ideas between health practitioners and researchers, most of whom had never met before. We found that many health practitioners were not aware of current community health research, most of which is done outside the area. Again we found that the researchers present were not aware of the problems facing the practitioners and that the majority of them were not directing their efforts toward helping the community solve its current problems. Most participants responded that this direct confrontation within the structure of a 1½-day conference had some mutually beneficial results. However, many participants felt that the conference matter was too comprehensive and the allotted time too short to produce any long-lasting results. The participants in the second conference indicated, as did those in the first, that a permanent mechanism should be established to ensure continuous interchange of communications among such researchers and between these researchers and the practitioners in the Greater Washington Area. For future conferences they recommended sessions involving smaller groups of people, more homogeneous in make-up, with more specific topics which could be examined in depth.

With the assistance of the Advisory Committee we planned the third conference for October 30, 1968 on the subject, "How Can We Increase the Number of Papanicolaou Smears Taken in the Greater Washington Area?" This Conference was restricted to a group of 30, including 5 researchers in this narrower field of cervical cancer detection and 20 health practitioners who deal with this specific problem. Full-time researchers in this field could not be found, at least within commuting distance, and the project budget did not allow us to bring in people from outside the area. However, we had part-time researchers from the U. S. Public Health Service, the D. C. Department of Public Health, and Howard and Johns Hopkins Universities.

We had better representation of private physicians at this meeting because of their association with the Cancer Societies and with the Regional Medical Program. Organizations represented included the 3 medical schools, Government and voluntary hospitals, cancer detection clinics, and health departments. The majority of participants were physicians, but 5 other disciplines were also represented, namely, administration, health education, nursing, social science, and social work. No pre-conference evaluation was done for this 1-day conference. There were 3 formal lectures describing active projects in cervical cancer detection in the Metropolitan Area and throughout the Nation, a description of relevant social science research, and of research on detection by the self-test kit. General discussion followed and the last hour was devoted to soliciting specific recommendations for action to increase the number of Pap smears taken. The post-conference evaluation was structured to include returns from questionnaires and narrative reports. We believe that the conference met its primary objective of producing a good interchange of communication between research workers and health practitioners who must deal with the specific problem of cervical cancer detection.

The fourth conference, held on January 15, 1969, dealt with the problems of delivering family planning services. We invited 35 researchers and practitioners from the Washington area and 5 researchers from other metropolitan areas.

The Conference opened with a historical overview of the population problem, summarizing worldwide and national trends in population size, birth rates, contraceptive usage, and abortion over the past 2 centuries. This served as the springboard for 3 concurrent group discussions which tried to focus on contributions of research to utilization of family planning, especially birth control, in the Washington area and particularly among the ghetto population.

It was apparent that most of the health practitioners were not aware of the relevant social science research which has been accomplished and which might help them solve current problems of underutilization of available services, lack of communication between professionals and health consumers, failure to keep appointments, etc.

Remarks of the participants and reviewers during and after the Conference indicated that it was the most successful in terms of spirited interchange between and among researchers and practitioners.

The fifth conference, in the planning stage, is scheduled for April 17, 1969, and will be on the techniques of communication. It will focus on the problems of getting health messages to and from the professional to the urban poor as individual consumers and nonconsumers and as large groups of potential and actual patients. We shall invite about a hundred persons, including researchers, practitioners, and consumers. The format will be different, with concentration on a series of presentations followed by floor discussions. We hope to illustrate the latest research findings on these techniques from education, marketing, advertising, and industry and to motivate their trial to area problems in health.

During March 1969 we shall try to evaluate the effects of the conferences by sending a questionnaire to each participant in the first 4 conferences. We shall try to determine whether, after a lapse of 6 to 18 months, any of the researchers had devoted more attention to community problems or whether the administrators had implemented any of the research findings discussed during the conferences.

The other important effort this year is to obtain funds to continue and expand the project. We have already made an application to the Greater Washington Regional Medical Program, which has been approved by its Advisory Committee. We shall also apply to private foundations in the Washington area and elsewhere. We believe that the project should continue here to demonstrate fully its effectiveness and potential applicability to metropolitan areas throughout the Nation. If funding is obtained, the inventory on community health research will be repeated semi-annually and distributed. A newsletter on research and its area application may be used. A feasibility study could be done on the practicability of an abstracting service on community health for researchers and practitioners or of a current review of applicable research. Other modes of communication, information exchange, and distribution need to be investigated.

Scheduled conferences would be held periodically as determined by the result of pre- and post-evaluation of each conference as held and by community queries and questionnaires to ascertain the subjects most needing discussion. Different formats would be used, including lectures by experts and consultants from within and without the area, discussions using large and small groups, use of different locales, such as hotels, hospital staff rooms, etc.

There could be conferences to indicate to the researchers and practitioners the best methods of defining health problems and of pursuing funding objectives. These could be followed by small conferences for the delineation of specific categorical problems. In these we might attempt in as many sessions as are needed to devise the protocol for a research or demonstration project. The outline could then be distributed to researchers or practitioners in the region.

In the event that funding is not obtained, the project will cease its activities on May 1, 1969, but we hope that its results have shown merit and that some who read or hear about it may take up the work and apply it elsewhere in the Nation.

In summary, the American Public Health Association has carried out a research and demonstration project in the Greater Washington Area. We have accomplished the first total survey of community health research performed in the area. Some of it is true research and some of it is not. We have held 4 conferences which have been successful in getting researchers in community health to have face-to-face confrontation with administrators and health practitioners who are dealing with current problems. The survey and conferences have shown that no one is aware of the totality of active research or the extent of the problems. Neither group is particularly aware of the other's activities. We have pointed the way toward improving the interface and working together.

If funding can be obtained for continuation and expansion of the probject, there will be an opportunity to explore many other methods of communication among and between researchers, practitioners, and consumers. Possibilities are numerous, including continuous surveys, conferences to develop project proposals, and abstracting service in community health. The long-term goal is to promote research on current community health problems and to apply relevant research findings toward improving the health status of people, of the environment, and the whole community.

We wish to acknowledge the great assistance of the Advisory Committee whose members are:

Mr. William Bucher, Hospital Council of the National Capital Area
Dr. Leonard Chiazze, Jr., Department of Community Medicine and International Health, Georgetown University
Dr. Paul B. Cornely, Department of Preventive Medicine, Howard University
Mr. Richard J. Davidson, Maryland-D. C.-Delaware Hospital Association
Mrs. Ethel Dalmat, The Hospital for Sick Children
Miss Evelyn Flook, Health Services Research and Development Center, U. S. Public Health Service
Mr. Robert Guerrin, Tuberculosis and Respiratory Disease Association of the District of Columbia
Dr. Dorothy W. Harrison, Department of Preventive Medicine, Howard University
Mrs. Florence Hicks, D. C. Department of Public Health
Dr. Godfrey Hochbaum, Health Services Research and Development Center, U. S. Public Health Service
Mr. John Irvin, National Communicable Disease Center, Atlanta, Ga.
Dr. Lorin E. Kerr, United Mine Workers of America Welfare and Retirement Fund
Mr. Harold J. Mayers, United Mine Workers of America Welfare and Retirement Fund
Dr. Stanley P. Mayers, Jr., Human Resources Department, Arlington County, Va.
Miss Elizabeth Ryan, D. C. Public Health Association
Dr. Frederick W. Wolff, Washington Hospital Center

Drs. Yater and Kyle Honored by the College of Physicians

At the fiftieth Annual Convocation of the American College of Physicians, held April 24, 1969, during the Annual Session of the College in Chicago, Masterships in the College were bestowed upon Dr. Wallace M. Yater and Dr. Laurence H. Kyle of Washington.

Less than 100 Fellows have been elected to Mastership in the history of the College; only a few are added each year. The late Dr. William Gerry Morgan, who served as President of the American Medical Association in 1930, was elected to Mastership in 1941, and Dr. William S. Middleton, who was Medical Director of the Veterans Administration from 1955 to 1963, was so honored in 1952. They constitute the total Masters of the College from Washington, D.C.

Fellows of the College are recommended to the Board of Regents for Mastership because of personal character, positions of honor and influence, eminence in practice or in medical research, or other attainments in the art of medicine.

Upon receiving his Mastership in the College, Dr. Yater was further honored by receiving the Alfred Stengel Memorial Award. This Award is given periodically to a Master of the College for outstanding service to the College in an official capacity. The selection for this Award is based upon unusual loyalty and exceptional contributions to the aims and purposes of the College, as well as the recipient's outstanding influence in maintaining and advancing the best standards of medical education, medical practice, and clinical research.

Dr. Yater, the twenty-second recipient of this Award since it was established in 1947, is an unusually well qualified and most deserving recipient, having served the College in an official capacity for 35 years. He began his long and outstanding service as Governor of the College for the District of Columbia (1933–1949), followed by 7 years as Regent of the College (1949–1956), and finally as Secretary-General from 1956 to April 1968. The following résumé of his accomplishments and contributions during that period of office was included in the citation:

"Though a native of New York State, Dr. Yater has lived most of his life in Washington where he received his Bachelor's degree from George Washington University and his M.D. degree from Georgetown University. Following a Fellowship at the Mayo Clinic he returned to Georgetown as the first full-time Clinical Professor, and from 1930 until 1945 was Professor and Director of the Department of Medicine. He has been active in the affairs of the Medical Society of the District of Columbia, serving as its President, and founding its Medical Annals of which he continues as Editor. He has acted as consultant to the Army Medical Corps, the Walter Reed Hospital, the U. S. Public Health Service, and the National Institutes of Health, and has been a member of committees of the National Research Council. Dr. Yater has published 140 medical papers and 2 medical textbooks. Since leaving Georgetown School of Medicine he has been Director of a private medical clinic. He has labored longer in College affairs than any other member, as Governor, Regent and for 12 years as Secretary-General. For a lifetime of service to the medical profession, and especially for the 35 years of service to the College, the College is happy to present the Alfred Stengel Medal and a Mastership to Dr. Yater."

DR. YATER AND DR. KYLE, who were awarded Masterships in the American College of Physicians, appeared in academic regalia at the Convocation ceremonies in Chicago, April 24.

Dr. Kyle, a Fellow of the College since 1958, came to Washington in 1947 after extensive training in internal medicine and research experience in endocrinology. Joining the faculty of Georgetown University School of Medicine in 1948, he began a long and distinguished career as teacher and researcher at the Medical School and University Hospital. He was appointed Professor and Chairman of the Department of Medicine in 1958. In the capacity of consultant to Walter Reed Army Medical Center, Walter Reed Army Institute of Research, National Naval Medical Center, the Clinical Center of the National Institutes of Health, and the Veterans Administration Hospital, Washington, he has provided able assistance to teaching, research, and patient care in areas outside the University Medical Center.

Thomas W. Mattingly, M.D.
Governor for the District of Columbia,
American College of Physicians

Convalescing . . . but still a long way to go. Anxiety can make it even longer.

Convalescence following medical or surgical procedures may be almost endless to an anxious patient. And, indeed, anxiety with some patients actually retards progress—for example, by inducing insomnia and reducing cooperation.

As physicians have found during nearly 15 years of widespread use, Equanil may be a beneficial part of aftercare. It helps relieve anxiety and tension, thus often aiding your primary therapy.

Indications: For use in management of anxiety and tension occurring alone or as accompanying symptom complex to medical and surgical disorders and procedures. Though not a hypnotic, fosters normal sleep through antianxiety and related muscle-relaxant properties.

Contraindications: History of sensitivity to meprobamate.

Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® [strip pack], Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

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►NEW MEMBERS

Active

Monis Murray Dachman, M.D. Office: Naval Hospital, Annapolis, Md. Born in Washington, D.C. Medical degree: Chicago Medical School, 1962. Specialty: General Surgery.

Gad Gerd Guttman, M.D. Office: 730 24th Street, N.W. Born in Herne, Germany. Medical degree: University of Freiburg, Germany, 1960. Specialty: Orthopedic Surgery.

Ok Kyung Kang, M.D. Office: Washington Hospital Center. Born in Korea. Medical degree: Seoul Women's Medical College, 1956. Specialty: Anesthesiology.

Walter Reams Perkins, M.D. Office: 825 New Hampshire Avenue, N.W. Born in Richmond, Va. Medical degree: Medical College of Virginia, Richmond, 1961. Specialty: Obstetrics and Gynecology.

Associate

Istvan Nyirjesy, M.D. Office: 8218 Wisconsin Avenue, Bethesda, Md. Born in Budapest, Hungary. Medical degree: Catholic University of Louvain, Belgium, 1955. Specialty: Obstetrics and Gynecology.

Luis Carlos Radice, M.D. Office: 5021 Seminary Road, Alexandria, Va. Born in Argentina. Medical degree: University of Buenos Aires, Argentina, 1957. Specialty: Obstetrics and Gynecology.

Irving M. Rollins, M.D. Office: 1735 K Street, N.W. Born in New York City. Medical degree: New York Medical College, 1942. Specialty: General Surgery.

John Lesesne Syphax, M.D. Office: St. Elizabeths Hospital. Born in Washington, D.C. Medical degree: Howard University, 1965. Specialty: General Practice.

Resident-Intern

J. David Pearah, M.D. Office: Washington Hospital Center. Born in Reading, Pa. Medical degree: Temple University, 1968. Specialty: Ophthalmology.

Patients Wanted for Clinical Studies

Drug-induced systemic lupus erythematosus: The coöperation of physicians is requested in the referral of patients for a study of the relationship of drugs to the induction of systemic lupus erythematosus (SLE) being conducted by the National Institute of Arthritis and Metabolic Diseases at the Clinical Center of the National Institutes of Health in Bethesda, Md.

Certain pharmacological agents (hydralazine, procainamide, isoniazid, various anticonvulsants) are capable of inducing a lupus-like syndrome characterized by fever, arthralgias, pleurisy, pericarditis, and skin rashes. The serum of such patients contains antinuclear factor and gives a positive lupus cell preparation. These symptoms will often subside, and the serologic abnormalities disappear when the offending drug is removed.

Patients with this syndrome may have an enhanced predisposition to the development of spontaneous SLE. NIH investigators are interested in obtaining 10–20 ml. of serum from such patients for the study of antinuclear antibodies. In certain instances it may be desirable to hospitalize selected patients at the Clinical Center for further evaluation of genetic and environmental factors contributing to their illness.

Physicians who wish to have their patients considered for this study may write or telephone Dr. Norman Talal or Dr. John L. Decker, Clinical Center, Room 9-N-218, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496–1257.

Chronic myelogenous leukemia: The coöperation of physicians is also requested in a continuing study of chronic myelogenous leukemia being conducted by the Medicine Branch of the National Cancer Institute at the Clinical Center.

Referrals of patients with chronic myelogenous leukemia are needed. Patients of all ages with high white blood cell counts and platelet counts are needed for studies of newer chemotherapeutic agents and as a source of white cells and platelets for in vitro and in vivo study.

Physicians who wish to have their patients considered for the study may write or telephone Dr. George P. Canellos, Clinical Center, Room 12N-236, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496–4916.

Honors to Dr. Putzki

A group of colleagues and friends of Dr. Paul Stirling Putzki held a reception and dinner in his honor at the Mayflower Hotel, April 26. The party marked the fiftieth anniversary of his return in the spring of 1919 from service with the Rainbow Division in France during World War I and his entrance into the private practice of surgery in Washington.

Dr. Donald Stubbs, a close friend and associate of Dr. Putzki, presided at the dinner, which was attended by some 375 persons. Photographs taken of Dr. Putzki over the years had been made into slides and were presented as a "this is your life" biography. The slides and a bound volume of letters from friends and associates were given him as mementos of the occasion.

Dr. Putzki, a Washingtonian, is a graduate of old Central High School, which nurtured so many distinguished leaders. After receiving his medical degree from George Washington University School of Medicine in 1915, he interned at the Columbia Hospital for Women and served a year as resident in surgery at Emergency Hospital. With World War I in progress, he enlisted in the Medical Corps of the U. S. Army and was called to France with the Rainbow Division in 1918. Returning from War service in 1919, he began his private practice of surgery in association with Dr. Charles Stanley White, and several years later opened his own office.

DR. PUTZKI, guest of honor at a reception and dinner at the Mayflower Hotel, April 26, and Dr. Stubbs, who emceed the program which followed.

During the ensuing 50 years he has cared for tens of thousands of patients and has served with distinction as Chief of Surgery at Doctors, Sibley, and Providence Hospitals and as Clinical Professor of Surgery at George Washington University. He is a founding member of the American Board of Surgery and has served as Governor for the District of Columbia of the American College of Surgeons. He is a founder and past President of the Washington Academy of Surgery and is one of the founders of the Blue Shield Plan of Washington. He is still an active member of the staffs of Doctors, Sibley, Providence, and Columbia Hospitals.

A Putzki Committee, with Dr. Duane C. Richtmeyer as Chairman, is establishing a fund in

(Continued on page 352)

DR. ROBERT T. SCANLON (right), Clinical Professor of Pediatrics at Georgetown University School of Medicine, received the Pediatrician-of-the-Year Award for 1969 from Dr. Philip L. Caleagno, Chairman of the Department, April 9, at the International Club of Washington. Sharing in the honors to her husband is Mrs. Scanlon.

DOCPAC BRIEFS

or

"Who is going to pay the bill?"*

I MAINTAIN that we cannot now abandon the principles that so many have fought and died for. Even though the struggle is difficult, the battle hard and unpopular, America the beautiful never came about because men shrank from doing their duty. We must stand up and be counted.

What is the attitude of American people? How highly is freedom esteemed in this land? Unfortunately, we have a despicable group who claim freedom's rights without living up to its responsibilities. Fortunately, they are not the majority, or even a significant minority—but we are well aware of their presence. They assault all the senses—eyes, ears and nose.

Just a few days ago, out in Arizona, a young man who lives his life in a wheelchair, faced down a group of these hippies . . . with one question: "Who pays the bills?" (He happens to pay his own bills.) This crippled young man, in spite of his difficulties, is working his way through the University of Arizona, has held 5 scholarships, and works and studies 18 hours a day. He put the finger on the problem that underlies all our domestic and international unrest when he asked the question, "Who pays the bills?"

In perhaps a little different way I think this is the question most Americans are asking today. They feel it in the frustrations and suppressed anger that leap up when they see college and university officials who stand aside and wring their hands for a week before moving in on a bunch of student hoodlums.

Decent law-abiding citizens of every color are angered when rioting and looting are defended as expressions of grief. Deep down, America gets mad when Washington keeps promising to do everything for everybody all the time. Americans want to know, "Who is going to pay the bill?"

I think just about everyone knows who the hippies, and the deadbeats, and the hangers-on expect to pay the bill. You—hard-working, patriotic Americans. Yes, you—with more taxes. All it will take to destroy America eventually is for more people to become "tax-eaters" than "taxpayers." Then we go down the drain.

This is not simply idle speculation. We have seen the signs and gathered the warnings from Britain for years. I don't have to tell this group about the "brain drain." You are well aware that doctors and other highly motivated scientists have been fleeing the smothering socialized system. Recently the British government announced another cutback in the already meager medical program offered to the public.

Whenever there is a choice, productive people will not work under a system that provides them no incentive. We want and we must demand that America retain the freedoms that have given this Nation world leadership.

That's what DOCPAC is all about. We need more members and dues ($20, or family $30) to work with. Send to DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D.C. 20007 or to the Medical Society, 2007 Eye Street, N.W., Washington, D.C. 20006.

WILLIAM H. COOPER, M.D.
Chairman, D.C. Political Action Committee

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* Excerpts from "Politics Without Doctors Is Bad Medicine" by Senator Paul Fannin, of Arizona, and reprinted by permission from the Journal of the Georgia Medical Association, October 1968.

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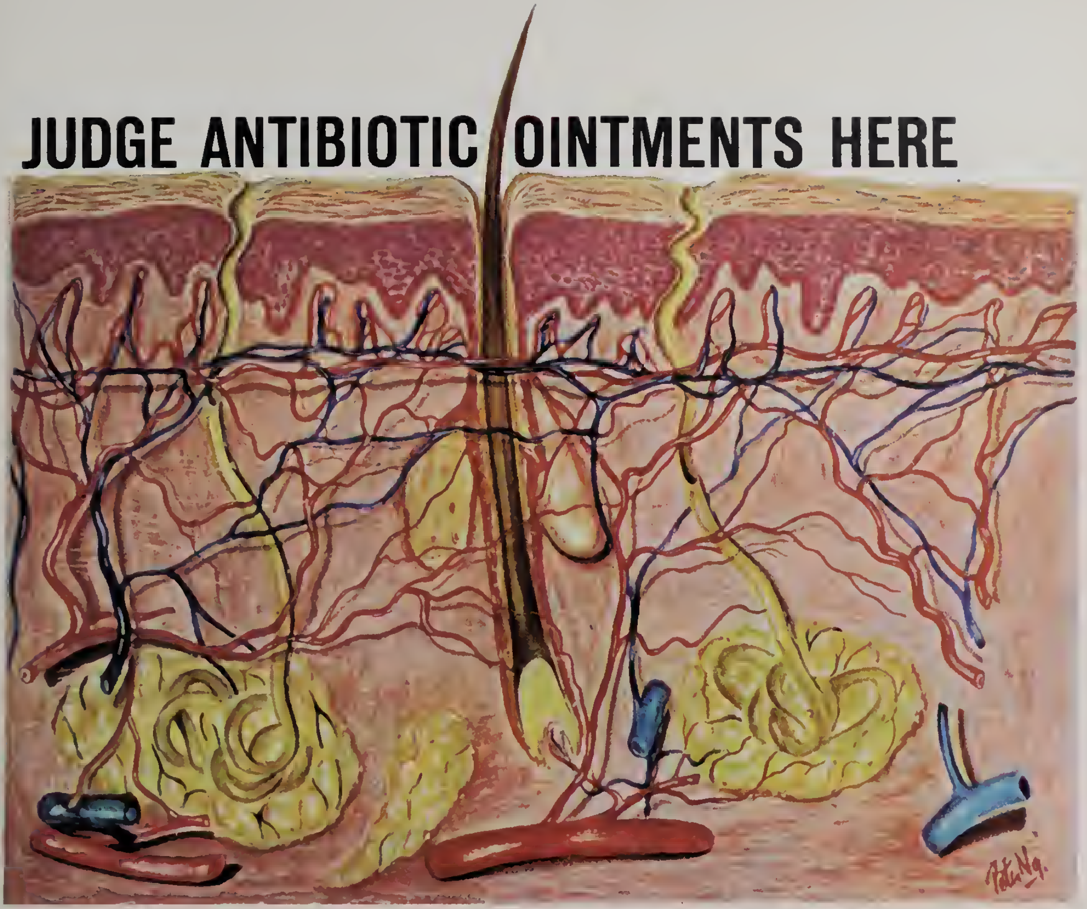

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RSE REACTIONS: No side effects or ations not seen with either compound ve been reported with Librax. When zepoxide hydrochloride is used alone, ss, ataxia and confusion may occur, y in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally with chlordiazepoxide hydrochloride, making periodic blood counts and liver-function tests advisable during protracted therapy. Adverse effects reported with Librax are typical of anticholinergic agents, *i.e.*, dryness of mouth, blurring of vision, urinary hesitancy and constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diet.

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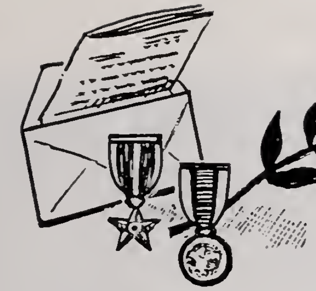

News & Personals

Summary of Executive Board Actions

Proceedings of April 28 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Thomas M. Arnett, Henry D. Ecker, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary.

Immediately preceding the formal meeting, Dr. Milton C. Cobey, who had been invited to appear before the Board, gave some background and clarifying information regarding the establishment of a Nation-wide bone bank. Dr. Cobey stated that the Navy has had such banks for some time, with 2 functioning, one in Bethesda and one in San Diego. Following his presentation and after a question-and-answer period Dr. Cobey departed.

The meeting was called to order by Dr. Wilner at 7:15 p.m.

The minutes of the March 24, 1969 meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

April 2 Interdisciplinary Committee on Drug Dependency
2 Fee Review Committee
3 Physician Placement Committee
8 Board of Credentials
11 Committee on Emergency Medical Service
11 Committee on Continuing Education
15 Grievance Committee
15 Liaison Committee with the Clergy
16 Liaison Committee with Allied Professions
17 Finance Committee
22 Committee on Child Welfare
23 Committee on Medical Aspects of Sports
24 Traffic Committee
24 Membership Committee

Board of Credentials: On recommendation of the Board of Credentials, 4 applicants were elected to Active membership, 4 to Associate membership, and 1 to Resident-Intern membership. Their names appear on page 338. Approval was given to the following changes in membership status:

Transfers

Active to Associate: William D. Byrne, Ruben D. Cabrera, and Stanley M. Silverberg

Associate to Active: Irene G. Tamagna, Elmo Francis Masucci, and Marc Vincent

Resignations

Active: George Cromwell Gallagher, K. Elizabeth Parker, and Sidney L. Werkman

Associate: John B. Brady, Laurence E. Rubin, and James S. Stanton.

Nation-wide Bone Banks: The Board resumed its discussion of Dr. Cobey's proposal which had been presented earlier. A motion was made and carried that an ad hoc committee be appointed to fully investigate the proposal, to determine legal and financial responsibilities involved, and to further determine whether the Society should consider implementation of his recommendation.

Interagency Council on Smoking: After discussing the functions of the Council, the Board, in line with the recommendations of the Committee on Smoking and Health, voted to continue supporting the Interagency Council on smoking in principle.

The Board also voted again to request hospitals in the District of Columbia to stop the sale of cigarettes on their premises.

Committee on Legislation Proposed: The Board agreed with Dr. Bacon that the Society needs a legislative committee and he was requested to appoint a Committee on Legislation, Federal and Local.

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Health and Welfare Council: Dr. Bacon presented some clarifying information on the functions of the Council, noting that the Society should at this time appoint a delegate to its Assembly. Dr. Jack Kleh was appointed to serve in that capacity.

Committee on Mental Health: The Board voted to accept the recommendation of this committee that the Society oppose legislation which would put the medical aspects of drug control in the Department of Justice and that the medical aspects of drug control remain in the Department of Health, Education, and Welfare.

Interdisciplinary Committee on Drug Dependency: The Board approved the coöperative efforts of this Committee and its Chairman, who is a member of the D. C. Professional Advisory Council, with the D. C. Department of Public Health in the Methadone Maintenance Program in the District of Columbia (a rigidly controlled scientific and research program by professional personnel).

Finance Committee: It was voted to accept the recommendation of this Committee that the contract of the Executive Director be renewed for 3 years.

The report of the auditor for the calendar year 1968 was accepted as presented.

Medical Bureau Committee: A motion was made and carried that the salary expense incurred for providing physician referral services be charged to the Society rather than to the Medical Bureau.

Reduction of Mortgage: It was voted to transfer $30,000 from the General Fund to the Building Fund and to make a total payment of $60,000 to reduce the mortgage.

Pending Legislation: Mr. Warren E. Magee, Legal Counsel, appeared briefly at the meeting to give a progress report on the status of pending legislation. His report covered the optometry bill, and he urged again that the Society continue its opposition to this bill which in essence would give optometrists a monopoly.

Mr. Magee also mentioned the possibility of a revival of levying the unincorporated business tax on physicians and other professional groups.

Third Socioeconomic Congress and Scientific Assembly: For information, Dr. Bacon presented a report on the Third Socioeconomic Congress, held in Chicago, March 28–29, and a progress report on the 1969 Scientific Assembly.

Combined Scientific Assembly: In response to the recommendation of Dr. Bacon, a motion was made and carried that an ad hoc committee be appointed to investigate the possibility of a combined scientific session of the Medical Society of the District of Columbia and the Maryland State Society to be held in Montgomery or Prince George's County in 1972 or possibly 1973.

RMP Activities: The report from Dr. Arthur E. Wentz on the activities of the Regional Medical Program was accepted as submitted.

Health Facilities Planning Council: Dr. Bacon reported on the functions of the Health Facilities Planning Council and its current efforts to obtain an organizational grant under the Comprehensive Health Planning Act. Dr. Edward W. Nicklas, a Board member of the Council, requested the Medical Society to approve such a proposal. Members of the Board agreed that the Medical Society endorse the efforts of the Council to obtain an organizational planning grant under the Comprehensive Health Planning Act, with the understanding that the purpose of obtaining the grant would be to provide time to determine whether the planning process can best be carried out by a coalition of existing agencies or whether a new agency will have to be formed.

Other Business

1. The proposed transfer of the administration of St. Elizabeths Hospital from the National Institute of Mental Health to the D. C. Government was discussed. The Board voted to make a vigorous protest to this transfer through the proper channels.

2. Dr. Bacon reviewed the proposed changes in the Relative Value Scale for laboratories, and the changes were approved by the Board.

There being no further business, the meeting was adjourned at 10:15 p.m.

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MEETINGS

The American Medical Association will convene for its **118th Annual Convention** in New York City, July 13–17, 1969. General scientific sessions are planned on the following topics: Human Sexuality, Physical Fitness and Aging, Impact of Medical Education on Patient Care, and Chronic Pulmonary Insufficiency and Air Pollution Problems. The May 26 issue of *The Journal of the American Medical Association* carries the entire scientific program. Most of the scientific activity will be in the Coliseum and at the New York Hilton Hotel. The House of Delegates will meet at the Americana Hotel.

GENERAL NEWS

The need for a new type of physician, a specialist in emergencies, has resulted in the **organization of the American College of Emergency Physicians**. A nucleus of physicians, both from full-time and part-time emergency care groups in Michigan, organized the College in August 1968 and at a meeting in Chicago, February 7 and 8, 1969, took steps to widen the scope of the new specialty group.

One of the main purposes of the College is to improve emergency services rendered to the patient. Other aims of the College are: "to encourage and implement the training and continuing education of emergency physicians; to promote policy which preserves the integrity of private practice; to promote coördination of community emergency care facilities and personnel; and to advance the ethical standards of private practice of Emergency Medicine and Surgery."

Physicians who are working full-time or part-time in emergency departments across the country may write for further information to the Executive Secretary of the College, 120 West Saginaw Street, East Lansing, Mich. 48823. Physicians in the Washington Metropolitan Area may contact Dr. Don Wenger at George Washington University, 2029 G Street, N.W., Washington, D.C. 20306.

The British United Provident Association, a private health care financing organization in Great Britain, has become an affiliate member of the National Association of Blue Shield Plans. The action, which for the first time extends Blue Shield beyond the Atlantic, was taken during the Annual Business Meeting of Blue Shield Plans in Chicago, April 11–13, 1969.

Any nonprofit medical care plan located outside the United States may become eligible for affiliation, provided such a plan complies with Blue Shield's standards for affiliation. In addition to Great Britain, there are Blue Shield plans in Puerto Rico and Canada.

The Metropolitan Medico-Legal Society held its spring dinner meeting and election of officers on April 23. The new officers are:

Dr. Everett J. Gordon, *President*; Dr. Arthur P. Hustead, *Vice President*; Dr. Mervin H. Zimmerman, *Secretary-Treasurer*; and Dr. Maurice H. Herzmark, *Historian*.

All physicians of Metropolitan Washington are invited to become members. Dr. Zimmerman will be glad to furnish an application.

At the April meeting the speaker was Mr. Jack Garrell, Deputy Commissioner of the D. C. Bureau of Employees Compensation. The October meeting will be concerned with the subject of malpractice.

The D. C. Chapter of the American Association of Medical Assistants held its Eighth Annual Meeting and election of officers at the Hotel Statler-Hilton, April 12. The installing officer was Mrs. Ruth Dize, President-elect of the AAMA and Past President of the Virginia Association of Medical Assistants. The electees were:

President-elect: Miss Judy Shipe
(Dr. John M. Keshishian)
Vice President: Miss Mary Weimer (Dr. Ray Brown)
Secretary: Miss Alma Carter (Dr. Edward C. Mazique)
Treasurer: Mrs. Marian Green
(Drs. Abernethy, Ecker and Nelson)

Mrs. Betty Delwood (Dr. Worth B. Daniels) assumed office as President for 1969–70. Dr. William S. Lyons is advisor to the Association.

In coöperation with the D. C. Division of the American Cancer Society, a seminar on "The Role of the Medical Assistant as It Relates to the Physical, Emotional and Financial Needs of the Cancer Patient" was held during the afternoon. Dr. Jesse Rubin, Executive Director of the Psychiatric Institute, was moderator.

Dr. Paul P. Griffin, formerly Senior Associate in Orthopedics and Director of Clinical Orthopedics at Children's Hospital Medical Center in Boston, is now full-time **Chief of Orthopedics**

at Children's Hospital of D.C., where he will be responsible for all care, teaching, and research in the field of orthopedics. He has also been appointed Professor of Orthopedics at George Washington University School of Medicine.

Dr. Griffin received his medical degree from Bowman Gray School of Medicine of Wake Forest College in 1953 and trained in surgery and orthopedics at North Carolina Baptist Hospital, Winston-Salem, and at Children's Hospital Medical Center and Peter Bent Brigham Hospital in Boston.

The Washington Office of the American Medical Association was moved this month to a new location, 1776 K Street, N.W., where it occupies the entire fourth floor. The new telephone number is (202) 833-8310.

PERSONALS

Dr. Cheston M. Berlin, Jr., Assistant Professor of Pediatrics, George Washington University School of Medicine, has been selected as a Scholar in Academic Medicine by the Markle Foundation, New York. He is one of 25 scholars selected from over 80 candidates from medical faculties in the United States and Canada and the third Markle Scholar to be chosen from George Washington University. His appointment begins July 1, 1969.

A sum of $30,000 will be paid over a 5-year period to the George Washington University Medical Center to aid and supplement research and to assist in the development of the Markle Scholar as teacher and investigator.

Dr. Berlin has long been interested in the regulation of enzymatic systems with particular reference to inborn metabolic defects. His clinical plans and laboratory research will include studies of inborn errors of metabolism, enzyme regulation and drug action.

An Honors graduate of Haverford College and Harvard Medical School, he was a Teaching Fellow in Pediatrics at Harvard and has served as Assistant Professor of Pediatrics at the University of Alabama.

Dr. Howard A. Donald, a member of the executive and teaching staffs of Doctors Hospital, has been elected Chief of Staff at Columbia Hospital for Women.

Dr. Donald, Chief of Staff at Columbia Hospital for Women

After graduating from George Washington University School of Medicine in 1939, Dr. Donald completed a year's internship in New Rochelle, N. Y., and then enlisted in the Medical Corps of the U. S. Army, serving with distinction for 5 years during World War II, 1940–45; he held the commission of Lt. Colonel. After the War he served a residency in obstetrics and gynecology at Columbia Hospital and has continued on its active staff. He is a diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetrics and Gynecology, and a member of many other scientific organizations.

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Dr. Roland B. Scott, Professor of Pediatrics at Howard University College of Medicine, has been elected a charter member of the Society for Adolescent Medicine, a newly organized group to foster and stimulate interest in the medical care of adolescents.

Dr. Scott and his colleagues in the Department of Pediatrics have recently inaugurated a clinic for adolescents at Freedmen's Hospital. The clinic is under the direct supervision of Dr. Karakat Gokulanathan and Dr. Janice Robinson. The clinic was developed with the support of the hospital administration as a service to the community.

Dr. Charles A. Hufnagel, Chairman of the Department of Surgery, Georgetown University School of Medicine, was initiated, May 5, into honorary membership in the Georgetown Chapter of Phi Beta Kappa. Dr. Hufnagel also gave the Phi Beta Kappa lecture on "Facets of Medical Research—Past, Present and to Come."

The Honorable Lister Hill of Montgomery, Ala., until recently Senator from Alabama, was awarded the Public Welfare Medal of the National Academy of Sciences, April 29, for "eminence in the application of science to the public welfare." The Public Welfare Medal is awarded approximately every 3 years. The last previous recipient, in 1966, was the Honorable John W. Gardner, then Secretary of Health, Education, and Welfare.

Another honor for former Senator Hill, an Honorary member of the D.C. Medical Society, is an endowed lectureship, named for him, established by the Century Club of the University of Alabama School of Dentistry. Through this new lectureship, an outstanding individual will be selected each year to deliver the annual Lister Hill Lecture at the University of Alabama School of Dentistry in Birmingham.

Dr. Benjamin Manchester, at a recent meeting of the Board of Trustees of the American College of Cardiology, was elected Governor for the District of Columbia. Formerly Associate Professor of Medicine at George Washington University School of Medicine, he is now Clinical Professor of Medicine.

Dr. George E. Schreiner, Professor of Medicine at Georgetown University School of Medicine, participated in the "Meet the Professor" program of the American College of Physicians in Chicago, April 24. As President this year of the National Kidney Foundation, he lectured throughout the Middle and Far West during April and May and this month is scheduled to go to the Medical School King's College, University of Durham at Newcastle-upon-Tyne, England, as a Jacobson Visiting Professor.

Dr. Don Flickinger has been designated to represent the American Medical Association at the International Congress of Aerospace Medicine to be held in Amsterdam, September 15–18, 1969.

OBITUARIES

Frank Marian Hand, M.D.

(1900–1969)

Dr. Frank M. Hand, orthopedic surgeon, whose offices were at 1302 18th Street, N.W., died, May 3, 1969, at Sibley Memorial Hospital. He lived at 8 Pinehurst Circle, Chevy Chase, Md.

Dr. Hand was born in Pelham, Georgia, February 6, 1900. He received his B. A. degree from George Washington University in 1922 and his medical degree 3 years later from Emory University. He interned for a year each at White Grady Hospital in Atlanta and Emergency Hospital in Washington. Following residency training in orthopedic surgery at Long Island College Hospital in Brooklyn, N. Y., he practiced briefly in Winter Haven, Florida, moving to Washington in 1930.

He had served on the teaching staff of both George Washington and Georgetown Universities. At the former he was Clinical Instructor in Orthopedic Surgery from 1930 to 1937 and at Georgetown, Associate Professor of Orthopedic Surgery from 1948–1954. From 1946 to 1958 he was Chief of Orthopedic Surgery at Emergency Hospital. He was Attending Orthopedic Surgeon at Children's Hospital (1930–1952), Garfield Memorial Hospital (1946–1957), Washington Hospital Center (1958–59), and for many years at Glenn Dale Hospital, Glenn Dale, Md. Since 1940 he had been Chief Orthopedic Surgeon at the Kiwanis Crippled Children's Clinic.

Dr. Hand was a diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, an Active member of the Medical Society of the District of Columbia since 1932, and a member of the American Medical

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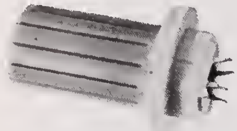

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Association, the American Academy of Orthopedic Surgery, the Southern Medical Association, the Association of Bone and Joint Surgeons, and the Washington Academy of Surgery. Since 1961 he was a consultant to the Veterans Administration Benefits Office.

His wife, Mrs. Muriel Downer Hand, died in January of this year. He is survived by a daughter, Mrs. Paul Lee Abernethy, Jr., 12612 St. James Road, Rockville, Md., and a sister, Mrs. Eunice Hurst, of Winter Haven, Fla.

Clinician and Drug Abuse Problem—Kieffer

(Continued from page 312)

programs, methadone maintenance, narcotic blocking agents, and other innovative treatment approaches, as well as methods of prevention and intervention.

Concerning the treatment of non-narcotic drug-abusers there is even less agreement than in the treatment of narcotic addicts. There is a clear need for more research in this area. In the meantime the physician who comes into contact with a drug-user should try to understand the meaning of his drug use, then try to help him to cope with whatever problems may have caused him to turn to drugs, while educating him in a nonhysterical, nonpanic-producing manner to the potential hazards of drug abuse.

It is obvious that much remains to be learned about every aspect of drug abuse and drug dependence and that much needs to be done in devising more effective means of treating the victims. The NIMH is currently supporting as many innovative treatment approaches as possible, as well as studies that hold promise for developing better means of prevention and intervention. More effective collaboration and coöperation among treatment programs, law enforcement agencies, courts, and others involved with the drug-abuser and the drug-dependent individual are imperative. We also need to look beyond the specific problems of each drug and each drug-user. We must identify and study the underlying problems which lead people to alter reality with drugs. The root causes of problems confronting our society, whether they be labeled poverty, racism, alienation, generation gap, or anything else, must first be understood more clearly if we are ever to articulate a reasonable solution to the problems of drug abuse.

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Study of Psychologic Factors—Robbins and Meyersburg

(Continued from page 320)

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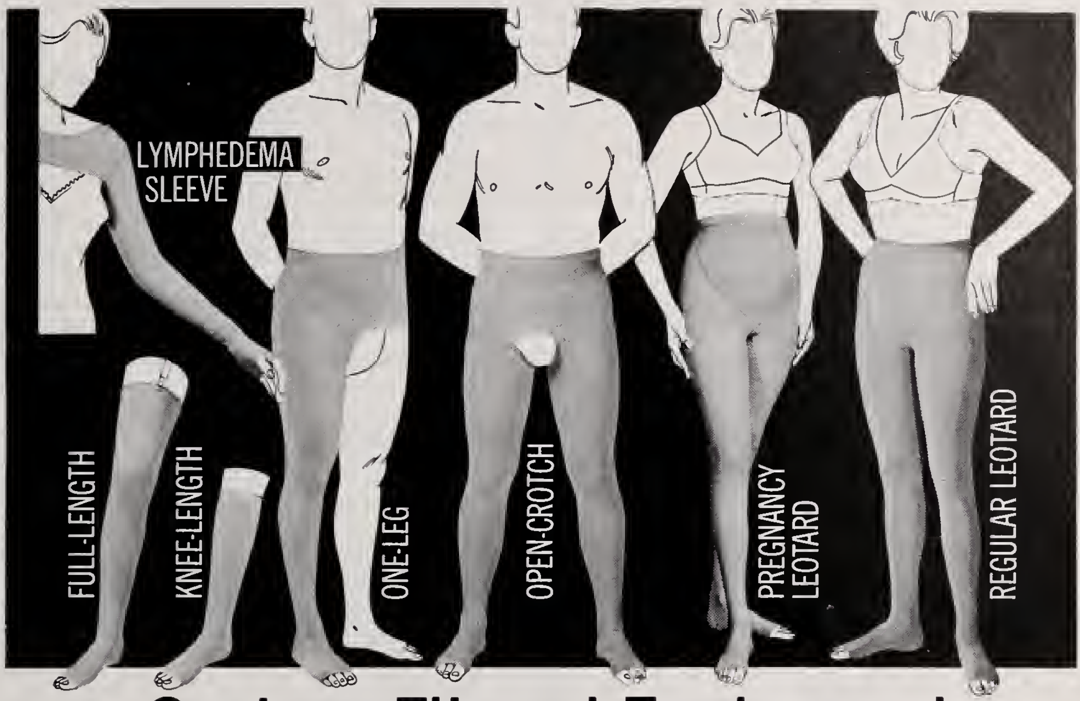
Honors to Dr. Putzki

(Continued from page 339)

honor of Dr. Putzki to be administered by an impartial trustee. The income will be used to bring prominent visiting professors of surgery to Doctors, Providence and Sibley Hospitals, the 3 institutions where he has served as Chief of Surgery. Contributions will be tax-deductible and may be sent to the Putzki Committee, Suite 308, 1835 Eye Street, N.W., Washington, D.C. 20006.



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NATIONAL & REGIONAL MEETINGS

June 28–29: American Diabetes Association. Hotel Roosevelt, New York. Address: Mr. J. Richard Connelly, Executive Director, 18 East 48th Street, New York, N. Y. 10017.

July 10–13: American Therapeutic Society. Essex House, New York. Address: Dr. Richard T. Smith, Secretary-Treasurer, 37 Narbrook Park, Narberth, Pa. 19072.

July 12: American Association for the Study of Headache. New York Hilton Hotel, New York. Address: Dr. Seymour Diamond, Executive Secretary, 512 North Western Ave., Chicago, Ill. 60625.

July 12–13: Society for Investigative Dermatology. New York Hilton Hotel, New York. Address: Dr. George W. Hambrick, Jr., Secretary-Treasurer, The Johns Hopkins Hospital, Baltimore, Md. 21205.

July 13–17: American Medical Association (Annual Convention). New York Hilton Hotel and Coliseum, New York. Address: Dr. Ernest B. Howard, Executive Vice President, 535 North Dearborn Street, Chicago, Ill. 60610.

August 8–9: International Doctors in Alcoholics Anonymous. Governor Morris Inn, Morristown, N.J. Address: Dr. Lewis K. Reed, Secretary-Treasurer, 1950 Volney Road, Youngstown, Ohio 44511.

August 10–14: National Medical Association. Hilton Hotel, San Francisco. Address: Mr. Samuel C. Smith, Administrative Secretary, 520 W Street, N.W., Washington, D. C. 20001.

August 24: American Association of Nursing Home Physicians. Shoreham Hotel, Washington. Address: Dr. Raymond T. Benack, President, 4115 Colie Drive, Wheaton, Md. 20906.

August 24–29: International Congress of Gerontology. Sheraton-Park Hotel, Washington. Address: Secretary, International Congress of Gerontology, 9650 Rockville Pike, Bethesda, Md. 20014.

September 20–27: World Congresses of Neurological Sciences. New York Hilton Hotel, New York. Address: World Congresses of Neurological Sciences, 420 Lexington Ave., Suite 417, New York, N. Y. 10017.

September 24–26: The Medical Society of the District of Columbia. Mayflower Hotel, Washington. Address: Mr. Thomas Sadler, Executive Director, 2007 Eye Street, N.W., Washington, D. C. 20006.

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Classified advertisements of a professional nature are free to members.

SITUATIONS WANTED

ANESTHESIOLOGIST, Board-qualified, with D. C. license, aged 33, seeks position as staff anesthesiologist. Available October 1, 1969. Address Box 58, 2007 Eye Street, N.W., Washington, D. C. 20006.

PEDIATRICIAN, with D. C. license, research background and Ph.D. in biochemistry, seeks association in D. C. area. Available July 1969. Address Box 47, 2007 Eye Street, N.W., Washington, D. C. 20006.

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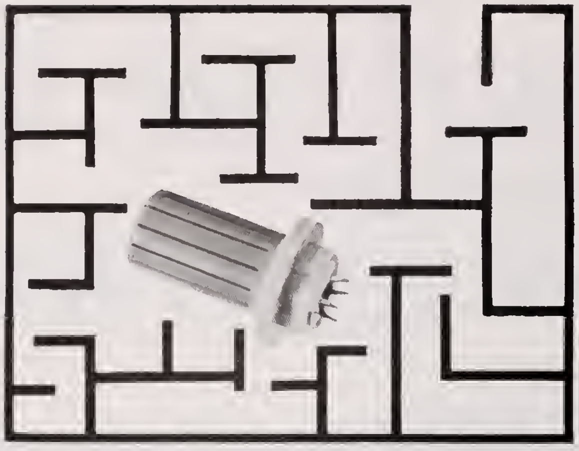

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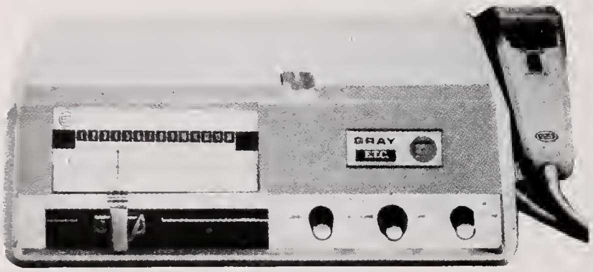

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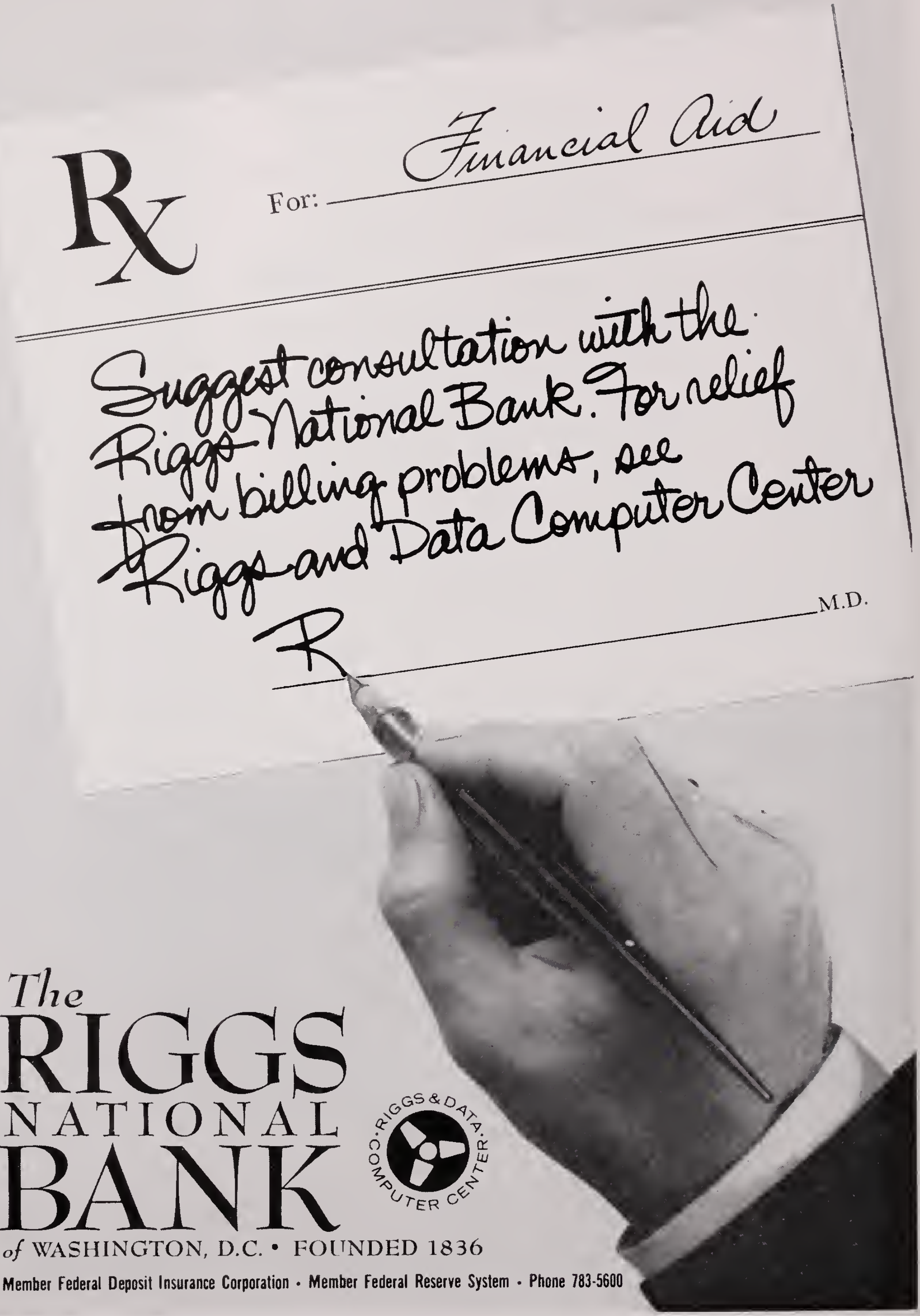

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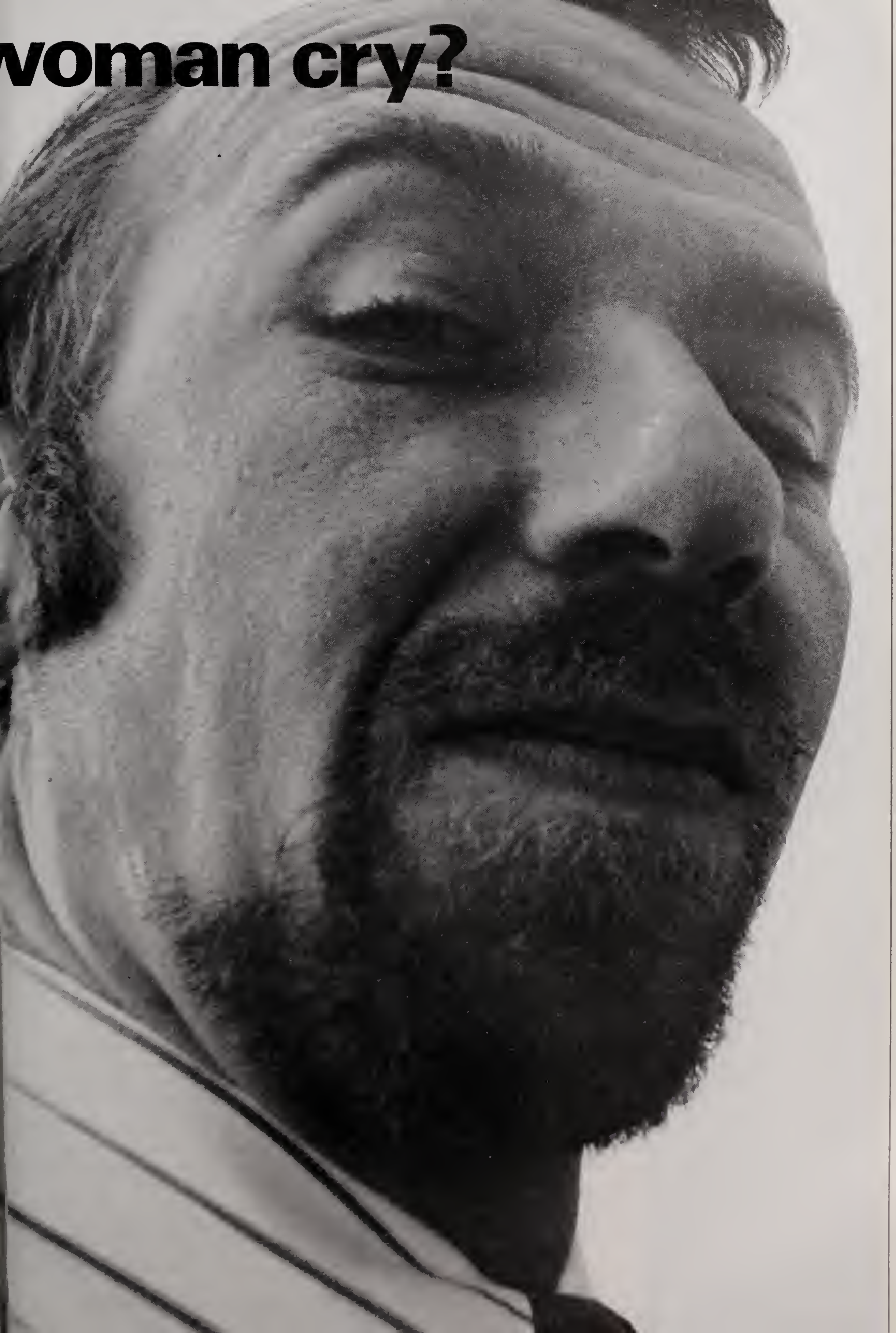


OVER THE DESK

Information on Physicians: Dr. Robert C. Derbyshire, Past President of the Federation of State Medical Boards of the United States and author of many articles on medical licensing, medical education, and surgery, addressing the Fourth National Congress on Health Quackery: "Without a doubt, the most authoritative source of information concerning physicians is the Department of Investigation of the American Medical Association."

The AMA has in its files the complete biographical records of all physicians from entry into medical school until death, he said, and records also are kept if the individual drops out of medical school.—AMA News release, October 2, 1968.

◆

Construction of New Freedmen's Hospital: There is one special item which the American Medical Association believes is deserving of separate mention. This is the appropriation for the construction of a new Freedmen's Hospital, to serve as the major teaching hospital for the Howard University Medical School in Washington, D.C. Although Congress passed a bill authorizing this construction in 1961, appropriation of funds for its construction has been delayed repeatedly in the intervening years. We believe the funds should now be provided to permit construction of the Freedmen's Hospital without further delay.—From Statement of the American Medical Association before the Subcommittee on Labor and Health, Education and Welfare of the Committee on Appropriations, U.S. House of Representatives, May 28, 1969, by C. H. William Ruhe, M.D., Director of the AMA Division of Medical Education.

◆

Two-year Ban on DDT: The Swedish Poisons Board last week decided to ban all use of DDT and related insecticides in the country for 2 years on a test basis from January 1, 1970 because of the "unmistakable" damage it causes to the natural environment.

Although the Board admits that DDT apparently so far has had no effect on the health of humans, the decision will affect farming, forestry and the household. The Board will, however, make exceptions to its ruling in certain areas, including the fight against rapeseed beetles. Until now about 90–100 tons of DDT have been used every year. The ban will be accompanied by an intensive research program.—News release, April 1, 1969, from Swedish-International Press Bureau.

◆

Safety Glasses and Sunglasses: A "first in the Nation" law passed in Alaska, which provides that only safety glasses and sunglasses be prescribed in the State was lauded . . . by the National Society for the Prevention of Blindness. The law (AS 08.72, an amendment-addition to Chapter 220 of the Alaska Statutes), which also prevents the sale and distribution of eyeglass frames made of highly combustible materials, was sponsored by Milo H. Fritz, M.D., a member of the Alaska House of Representatives, and becomes effective in May 1969.

The National Society's Executive Director, Dr. John W. Ferree, called the law "one of the most progressive steps ever taken to protect the eyesight of the millions who wear glasses," and pointed out that the law is "pioneer legislation—not only in the United States but in the world."—News release, November 1968, from National Society for the Prevention of Blindness, Inc.

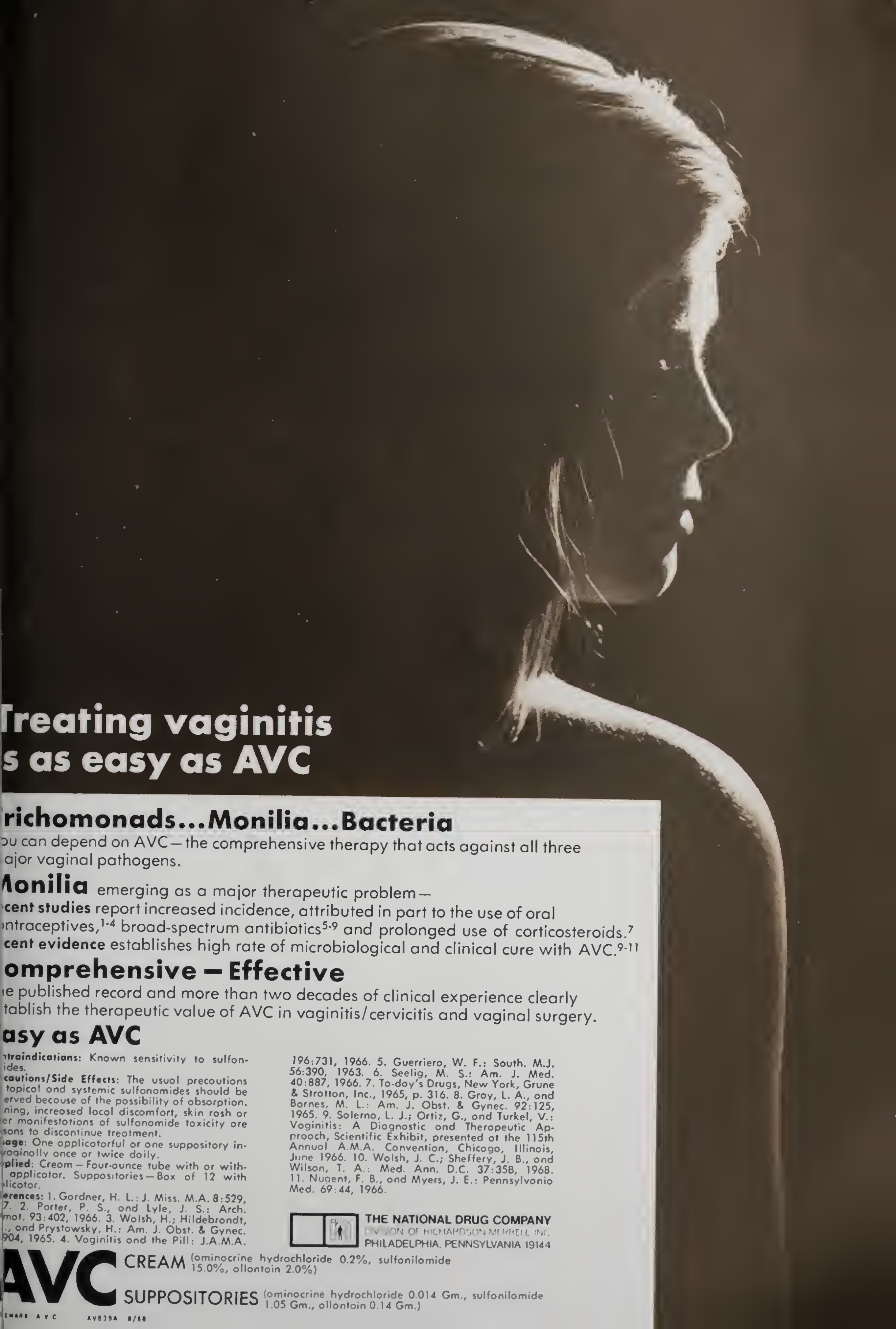
◆

Everyone Part of the "Now" Generation: That generation gap everyone's talking about pulled a fast disappearing act in the Upper Midwest during April and May. Its closing, according to the American Red Cross, can be attributed to the way the high school and college generation pitched in to wage battle against floods that endangered a 500,000-square-mile area stretching from St. Louis north to the Canadian border.

In an interim report on the Red Cross relief operation, the organization bows to the help received from the "now" generation and quotes an Oquawka, Ill., newspaper as stating that the youths who manned the dikes, sandbagged, helped feed emergency workers and the homeless "may look like Hippies, but it's because they're hip deep in water."—News release, May 1969, from the American Red Cross.

◆

Ordinance for Dating Milk: Beginning September 1, 1968 all milk sold in Baltimore City will be labeled SELL BY followed by the date after which the milk cannot be sold, for example, SELL BY 9-1. The new law was passed by the City Council in June and signed by Mayor Thomas J. D'Alesandro III on July 23.—*Baltimore Health News*, August-September, 1968.



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Book Reviews

Renal Disease in Childhood. John A. James, M.B. (Edin.), M.R.C.P., D.C.H. Price, $18.50. Pp. 371, with 104 illustrations. St. Louis: Mosby, 1968.

A question frequently asked is, who should care for pediatric renal problems: the pediatric nephrologist, the adult nephrologist, or the general pediatrician? Criticisms of each are well known: too few pediatric nephrologists, adult nephrologists do not understand children, and general pediatricians do not understand renal pathophysiology.

This book will be most helpful in making a general pediatrician fairly expert and confident to assume the care of almost all renal problems. It reads extremely well (author is British!), with a few exceptions. There is a nice balance between lucidly presented pathophysiology and practical advice. For a textbook the X-rays and microscopic pathology are unusually clear. Bibliography is excellent and reasonably up to date. There are excellent chapters on normal physiology, urinary tract infection, nephrotic syndrome, and chronic renal failure. The weak chapters are Symptoms and Signs of Renal Disease (not well organized) and Classification of Glomerulonephritis (the author's "new" classification only adds to the existing confusion in terminology).

Errors of omission are few. The discussion on hypertension is too brief, and the range of blood pressure normal for various ages is not presented. The most serious defect in this book is the failure to have a separate chapter on the immunology of the kidney. Immunology is discussed frequently in the pathogenesis of renal disease and obviously will be of great importance in future transplantations. These considerations demand that all physicians caring for children with renal disease, even acute glomerulonephritis, should be well grounded in immunology.

Minor defects consist of failure to mention the screening tests for inherited metabolic disease, such as $FeCl_3$, nitroprusside, and DNPH. This type of information is scattered throughout the literature, and a single table would have satisfied everyone. The author advocates phenothiazines to control vomiting; many pediatricians are strongly opposed to the use of these drugs because of the high incidence of alarming side-effects. Similar reservations exist about the use of phenobarbital for sedation; it excites many children. Valium® should have been mentioned as a valuable agent for seizure control.

The appendix, which mentions diets useful for the control of sodium, potassium, and protein intakes, would be much more useful if the amounts of these substances per volume or weight were given.

In spite of these shortcomings, this is a useful textbook with an excellent index for future reference.

Cheston M. Berlin, M.D.

An Introduction to the History of General Surgery. Richard Hardaway Meade, M.D. Price, $17.00. Pp. 403, illustrated. Philadelphia: Saunders, 1968.

The author begins with a concise but thorough coverage of the evolution of our knowledge of anatomy—from anatomy in India, through the Greeks, the Romans, the Middle Ages, the Renaissance to the more recents, Sir William Harvey, Thomas Willis, William Cheselden, and Velpeau. The 19th century is only briefly mentioned.

Throughout the book the history as it applies to organs or organ systems is carefully subdivided. Subject headings include, among the 30 chapters, Management of Wounds, Infections, Amputations, Anesthesia, Plastic Surgery, Blood Transfusions, Thyroid, Breast, Stomach and Duodenum, Gallbladder, Liver, Pancreas, Spleen, etc.

The development of Thoracic Surgery is well covered but not beyond World War II. Due to the fact that the book is only an "Introduction to the History of General Surgery," no coverage is given to the historical evolution of the subspecialties.

The chapters on Surgery of the Appendix, Surgery of the Rectum, and Surgery of the Kidney and Prostate are particularly interesting.

The book is a must for the young, budding surgeon, regardless of his specialty. As a reference it should be of excellent value. Although the book is not intended as an historical encyclopedia, the references at the end of each chapter are so complete and thorough that it would be a valuable addition to anyone's library.

Carlos A. Silva, M.D.

Surgery of the Adrenal Glands. Lawrence W. O'Neal, M.D. Price, $19.50. Pp. 295, with 212 illustrations. St. Louis: Mosby, 1968.

This is a well-organized and well-documented book which can be useful to the student and to the practicing surgeon as a basic text and as a reference book.

The anatomy and physiology of the adrenals are presented in the initial chapters, with particular emphasis on hormone metabolism. Despite its dry subject this book presents a thorough and necessary introdu

(Continued on page 16)

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Book Reviews

(*Continued from page 14*)

tion to the clinical sections on surgical diseases of the adrenals.

Cushing's syndrome, virilizing tumors, aldosteronism, pheochromocytomas, and sympathetic tumors are described in detail, with a complete discussion and a wealth of information on differential diagnosis readily accessible for practical use. Also very interesting and informative are the chapters on adrenalectomy for breast cancer, anesthetic management, and preoperative and postoperative care in the presence of known adrenal disorders.

As for operative technique, the author's preference is for a transabdominal approach, and only this procedure is described in detail.

A large number of excellent photographs supplement the text; however, the few drawings are of mediocre quality.

Massimo A. Righini, M.D.

Hearing Mechanisms in Vertebrates. A Ciba Foundation Symposium. Edited by A. V. S. de Reuck and Julie Knight. Price, $12.00. Pp. 320, with 107 illustrations. Boston: Little, 1968.

This volume reports the proceedings of the Symposium on Hearing Mechanisms in Vertebrates which was held in September, 1967. The volume is composed of 14 enlightening essays which comprised the formal presentations at the meeting. In addition to adequate tabular, photographic and illustrative material, each essay has a complete bibliography. An enriching discussion introducing pertinent data and other evidence from a wide variety of disciplines follows every presentation. The conclusions and speculations are freely challenged by the expert members of the Symposium, and the discussion provides fruitful reading. The inclusion of appropriate references is a valuable and time-saving device for the reader who is interested in pursuing the data to its primary source.

The Symposium is presented in 5 sections, the first of which deals with the comparative and detailed anatomy related to sound perception. The essay by Tumarkin is a particularly neat presentation of the various anatomical and functional middle-ear forms found in the amphibians and terrestrial vertebrates. The section describing the studies on birds, as well as an equally interesting paper dealing with bats, summarizes the vast amount of detailed information which has been gathered, much of it during the past decade. The detailed nature of the investigations is a forceful reminder that we know more about the hearing in various animal forms than we do about the hearing mechanisms in man.

A large portion of the Symposium is devoted to the discussion of the olivocochlear bundle and its function. Evidence for the facilitory as well as the inhibitory action is presented. It is speculated that the centripetal connections function at a refined level by directing the sensory input to a specific or appropriate effector.

The experiments dealing with the hearing mechanism in the fish demonstrated the ingenuity required to investigate the many facets of this complex problem. The discussions emphasized, among other things, the difficulty in separating hearing from feeling. The behavioral studies emphasized the complexity of data evaluation.

This review is offered from the standpoint of a clinical otolaryngologist. The value of this text, from the point of view of the practicing physician, is to familiarize him with the breadth and the depth of related knowledge that has been accumulated by physiologists, anatomists, and behavioral scientists.

The essay dealing with the comparative anatomy of the middle ear by Tumarkin is especially commended.

Haskins K. Kashima, M.D.

Physiology of the Gastrointestinal Tract. E. Clinton Texter, Jr., M.D., F.A.C.P., Ching-Chung Chou, M.D., Ph.D., Higino C. Laureta, M.D., and Gaston R. Vantrappen, M.D., Agg. H.O. Price, $10.75. Pp. 262, with 106 illustrations. St. Louis: Mosby, 1968.

The authors state in their preface that this book is directed toward the medical student; with this end in mind they succeed admirably in a succinct, concise presentation of gastrointestinal physiology.

The book is divided into 4 main sections, emphasizing splanchnic circulation, gastrointestinal motility, gastrointestinal secretion, and intestinal absorption. Each section has several chapters devoted to it. The text is liberally and adequately illustrated. At the end of each chapter a short, pertinent bibliography is appended.

If the book has a weakness, it is that the detail devoted to the sections on motility and splanchnic circulation is not present in the chapters devoted to gastrointestinal absorption. However, the fundamentals of absorption are well covered. The chapters on splanchnic circulation are most useful, because this is an area of gastrointestinal physiology which is often neglected.

This text is superior to the sections devoted to alimentary tract physiology in several of the standard general textbooks of physiology.

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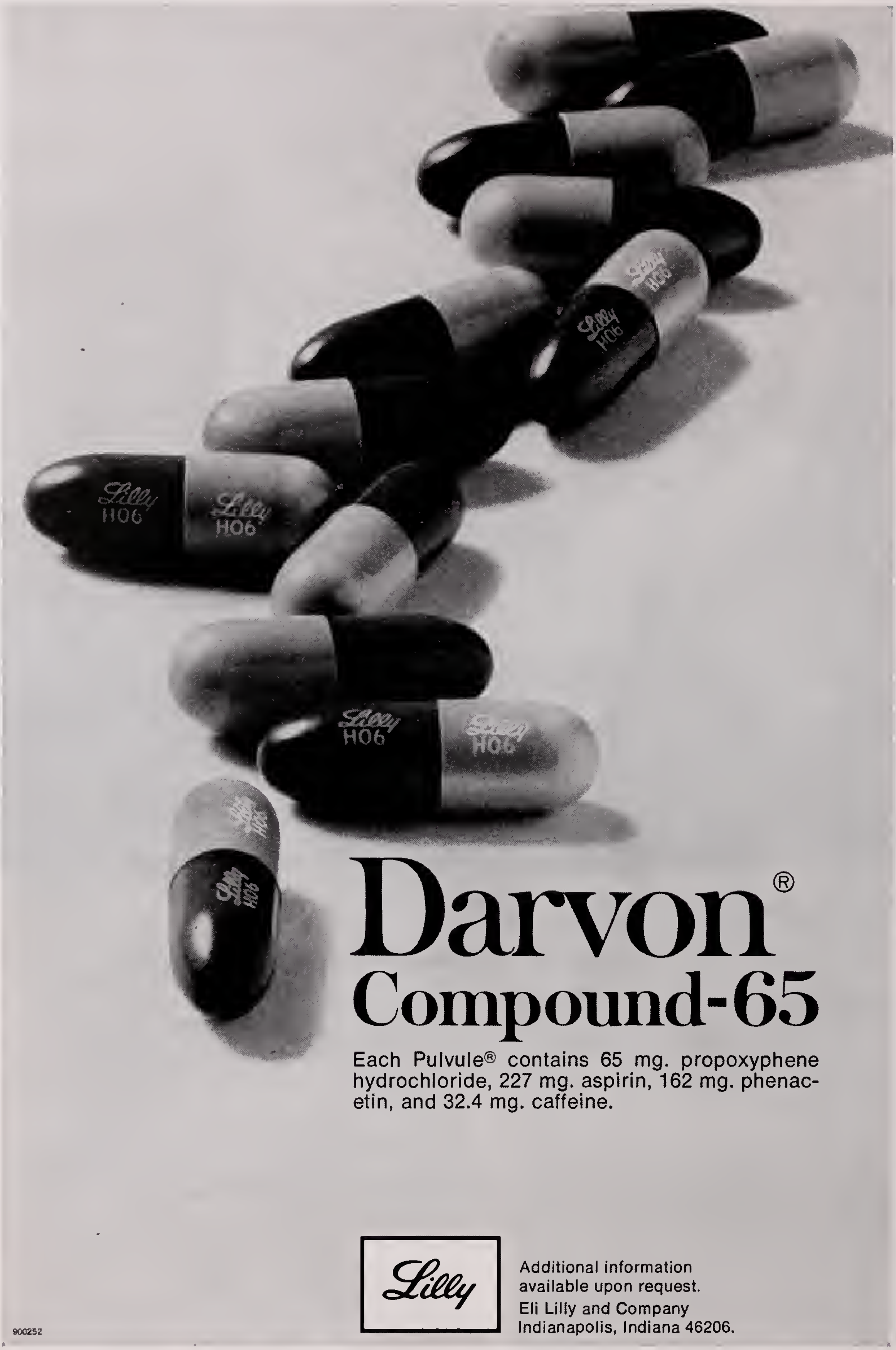

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THIS IS THE SECOND of a sixth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the ARMED FORCES INSTITUTE OF PATHOLOGY NUMBER the Editorial Board is indebted to Captain Bruce H. Smith, MC, USN, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue.

The opinions or assertions contained in the articles in this issue are the private views of the authors and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.

Meningiomas

A Study of the Histology, Incidence, and Biologic Behavior of 243 Cases from the Frazier-Grant Collection of Brain Tumors

KENNETH M. EARLE, M.D.,* AND SHAFIK FUAD RICHANY, M.D.*

IN 1953 Dr. Francis C. Grant, Professor of Neurosurgery of the University of Pennsylvania School of Medicine, transferred to the Armed Forces Institute of Pathology all of the available formalin-fixed tissue, paraffin blocks, and photographic copies of clinical records from his collection of 1,628 tumors of the nervous system. This collection was accessioned in the American Registry of Neuropathology as the Frazier-Grant Collection of Brain Tumors. This collection, consisting of the combined surgical specimens of Dr. C. H. Frazier and Dr. Francis C. Grant, was accepted at the AFIP by special arrangements with Brigadier General Elbert DeCoursey, then Director of the AFIP, and Dr. Webb Haymaker, Chief of the Neuropathology Branch at that time. The original slides were retained by the University of Pennsylvania. Over the next several years sections were prepared from the paraffin blocks and wet tissue, and summary cards were prepared from the detailed clinical records by various members of the staff of the Neuropathology Branch.

From this collection a detailed study was made of 243 meningiomas on which sufficient material was available.

An analysis of the biologic behavior of the meningiomas in this collection is the subject of this report. Cushing and Eisenhardt[1] classified their series of 313 meningiomas into 9 major tumor types and 20 variants. A review of their chronologic listing with details of duration of preoperative symptoms and duration of postoperative survival indicates that their histologic classification alone was not a reliable indicator of the biologic behavior of meningiomas, although it was a classic documentation of the variable features of meningiomas. We set out to determine if a more compact classification into only 5 major groups would be any better in predicting biologic behavior and to document the relationships, if any, between clinical and histologic features of meningiomas.

From the data summarized by us during the study, 26 statistical tables were prepared by the Medical Statistics Section of the AFIP. This report is limited to the major trends and conclusions that resulted from this combined study of histologic material, clinical records, and statistical tables.

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* Neuropathology Branch, Armed Forces Institute of Pathology, Washington, D.C. 20305.

Histologic Classification

The term "meningioma" was introduced by Cushing[1] at a time when such terms as dural endothelioma, psammoma, meningeal fibroblastoma, and other names reflected the dispute concerning the embryologic origin of the predominant cells of such tumors. He chose the term "meningioma" because "the simple and noncommittal designation meningioma as a catchword was thought to be suitable and all-embracing." The history of the classification of meningiomas by various authors was reviewed in detail by Cushing and Eisenhardt[1] and summarized by Kernohan and Sayre,[2] Russell and Rubinstein,[3] and Zulch.[4] Since these 4 books contain extensive bibliographies and review the differences of opinion that exist concerning nomenclature, we shall not repeat the arguments here. Suffice it to say that meningiomas are tumors that arise presumably from the meninges. The meninges normally contain 4 major elements: (1) the dura, which is composed largely of collagenous fibers and fibroblastic elements; (2) an outer layer of arachnoidal "cap" cells that are considered to be of neural crest origin and tend to cluster at the arachnoidal villi; (3) fibrous trabeculae and blood vessels in the subarachnoid space except where the cisterns separate the layers; and (4) the pia, which is a layer of flattened cells applied to the surface of the brain and that extends into the tela choroidea and along the penetrating blood vessels as the outer layer of the Virchow-Robin space.

In this study and in our previous experience we have classified the meningiomas into 5 groups on the basis of the predominant cell type and pattern, while recognizing that one part of a meningioma may be classified as one type and another part of the same tumor may be classified as another type. Spicules of bone, cartilage, melanin, lipid-containing cells, and calcareous deposits were noted in conjunction with a variety of basic patterns and were not considered to be specific to any type.

For this study we defined our 5 groups as follows:

1. Meningothelial meningioma. The predominant cell has the features of an arachnoidal "cap" cell. The pattern is predominantly that of oval nuclei with marginated chromatin and poorly defined cytoplasmic boundaries. Most of the nuclei appear by light microscopy to be in a "syncytium." Hence, this type is equivalent to the "syncytial meningioma" of Russell and Rubinstein,[3] except that we include cases in this group with areas of whorls and fibroblasts provided the syncytial areas predominate.

2. Fibroblastic meningioma. The predominant cell has the features of a fibroblast. The pattern is that of parallel and interlacing bundles of cells with considerable collagen and reticulin between the bundles.

3. Mixed-type meningioma. Meningothelial and fibroblastic elements are approximately equal in quantity. This type includes most of the "transitional type" of meningiomas as described by Russell and Rubinstein.[3] Whorls are usually a prominent feature, with or without psammoma bodies.

4. Angioblastic meningioma. Blood vessels and meningothelial elements are intimately mixed in this type. Some of these tumors are indistinguishable from the cerebellar hemangioblastomas except by location. We used the criteria described by Russell and Rubinstein, including their histologic variations, in separating this group. Mitotic figures and nuclear pleomorphism were more apparent in this group than in the first 3 groups. Clusters of xanthomatous cells were frequently mixed with the other elements, making this group indistinguishable from some of the fibrous xanthomas that occur elsewhere in the body.

5. Sarcomatous meningioma. The predominant cell has the features of a fibroblast, with greater amounts of nuclear chromatin, pleomorphism, mitotic figures, and evidence of invasion. In general, we restricted this variety to those tumors that had features of fibrosarcomas at first operation. We excluded meningiomas that showed an occasional mitotic figure or nuclear pleomorphism without evidence of invasion. We frequently found slow-growing meningiomas (by history) that had been called "malignant meningioma" or "sarcomatous meningioma" on the basis of a few finger-like projections into the brain, an occasional mitotic figure, or moderate nuclear pleomorphism. We classified such tumors in the first 4 categories and used the term "sarcomatous meningioma" only when there was unequivocal evidence of malignancy in the initial biopsy specimen. We excluded from the study all tumors composed of small dark cells that had been classified by the contributor as medulloblastoma, reticulum-cell sarcoma, or leptomeningeal sarcoma, since we believe that such tumors behave more like a medulloblastoma than a meningioma and their origin is even more controversial than that of the usual varieties of meningioma. With this restricted definition we found only 1 tumor in this collection that met all of the criteria of sarcomatous menin-

gioma at first operation. This number is lower than most reported series, but we have the impression that no more than 1 or 2 per cent of meningiomas deserve to be classified as sarcomatous at the time of first operation; however, several of the tumors in this study showed sarcomatous features at subsequent removal. Several of these had received ionizing radiation.

Statistical Results

This series of meningiomas, consisting of 243 cases from the Frazier-Grant Collection of Tumors, covers a period from 1918 to 1953. The first patient was operated on in 1918 and the last in 1953. In this period of 35 years, 62.4 per cent had 1 operation; 35 per cent had 2 or more operations; and 2.5 per cent had a diagnostic procedure or no operation. When these cases were grouped by decades we observed a steady increase in the number of patients who were operated upon. There is also a marked decrease in percentage of patients who had 2 or more operations and a steady increase in those who had 1 operation. Improvements in anesthesia and surgical techniques seem to have caused this change. Analysis of the cases with reference to type of first treatment showed that 85 per cent of the patients had either partial or complete surgical removal of the tumors. Of these, 54.7 per cent had complete removal, and 30.3 per cent had partial removal. The tumor was not removed at first surgery in 15 per cent of the cases. Data concerning X-ray therapy were incomplete and insufficient for statistical evaluation, but we have the impression that the dosages and the results were variable and that X-ray therapy was used for the most part when surgery was no longer practical.

Analysis by sex incidence revealed 64 per cent females and 36 per cent males. This clear preponderance in females has been shown consistently in comparable studies. The age range for females was 3 to 82 years and for males 11 to 76 years. The median age for both sexes was 44.4 years, which represents the maximal (or peak) incidence of these meningiomas. The maximal number of cases for both sexes occurred in the age range of 20 to 59 years.

Analysis of anatomic locations of these meningiomas revealed that the cerebral convexity constituted 25 per cent; parasagittal, 26.8 per cent; sphenoid ridges, 18.9 per cent; olfactory grooves, 9.9 per cent; cerebellopontine angle, 5.0 per cent; suprasellar (tuberculum), 4.5 per cent; cerebellar hemispheres, 2.5 per cent; petrous ridges, 2.1 per cent; and intraventricular, 1.6 per cent. Other sites ranged from 0.4 to 0.8 per cent. As to side of involvement in this series, the convexity group and the parasagittal group showed a slight tendency for the left side. In the "other locations" group the tumors arising from the base of the cranium showed a predilection for the right side; however, those about the central axis and, to a lesser extent, those in the parasagittal group were equally common on both sides.

Analysis of anatomic location by sex did not show a significant statistical difference except for the olfactory and suprasellar groups, which were of higher incidence in females, while cerebellopontine angle meningiomas were of greater frequency in males.

The percentage distribution of histologic types by sex showed that the angioblastic type tended to predominate in males, while other types were about equally common to both sexes.

Analysis of the location of the tumor by histologic type showed that the mixed type was of equal distribution in the 3 major locations: convexity, parasagittal, and "other locations." The angioblastic type was of lesser frequency in the convexity group as compared to the parasagittal and also to "other locations" groups.

When the distribution of histologic types versus age was analyzed, we noted that the highest frequency of each of the histologic types was in the age group of 40 to 49 years. In this series the meningothelial and fibroblastic types were encountered in almost all age groups. The mixed type (transitional) was not encountered in those below 10 years of age. The angioblastic type was not encountered in those below 20 years of age.

The distribution by location and histologic type of meningiomas showed greater frequency of involvement of cerebral hemispheres than the "other locations" group. The former was 51.9 per cent and the latter was 48.1 per cent. Statistically, no significant differences were noted between the histologic types as to their laterality.

When the tumor locations were grouped into convexity, parasagittal, and "other locations," significantly more patients were dead at last-known status in the "other locations" group than in the convexity group.

Histologic type was tabulated by last-known status of the patient. Data were available on 217 patients. Percentage-wise the distribution for those dead was not too dissimilar from that of those alive. When the patients with various histologic types were tested statistically no significant relationship was found between the last-known status of the patient and the histologic type of tumor.

Study of the duration from the onset of symptoms until the diagnosis was made revealed that a relatively small number of patients had symptoms more than 6 years prior to diagnosis for each of the histologic types. This is an important consideration when one is rendering an opinion about the relationship of remote symptoms alleged to be caused by a meningioma. Modern diagnostic procedures can be expected to shorten this time interval in the future.

A table of the duration of first symptoms in years by location was prepared. When locations were grouped by convexity, parasagittal, and "other locations," the median duration of first symptoms was 2 years and 3 months for convexity, 2 years and 8 months for parasagittal, and 2 years and 7 months for "other locations."

Survival rates from initial surgery by location of tumor were tabulated. When survival rates were computed by convexity, parasagittal, and other locations, the median survival for the convexity group was 15+ years, for the parasagittal 13 years and 10 months, and for other locations 12 years. This indicates that the life expectancy for those patients with tumor of the convexity area is better than for those with tumor in other areas, which was expected, since the convexities of the brain are more readily accessible to surgical excision of the tumor.

Survival rates from initial surgery by histologic type of the tumor were computed. The median survival for the meningothelial group was 13 years and 3 months, and for the other 3 histologic groups 15+ years.

The incidence of first symptoms by anatomic location was studied for convexity, for parasagittal, and for "other locations." Headache, visual impairment, focal seizures, external swelling on the head, and paresthesias were the most common first symptoms, in that order, for all cases. As anticipated, patients with the convexity meningiomas had seizures more often (31 per cent focal and 1.7 per cent generalized) than those with meningiomas of other locations.

The incidence of all complaints (in addition to the first symptoms) for all cases including convexity, parasagittal, and "other locations" was tabulated. Only 36.7 per cent of the combined cases had had seizures (22.1 per cent focal and 14.6 per cent generalized), but the convexity and parasagittal groups each showed that more than 50 per cent of these patients had had seizures during the course of their illness and that focal seizures had been more frequent than generalized seizures.

Summary

The results of statistical studies of the incidence and biologic behavior of 243 meningiomas from the Frazier-Grant Collection have been presented. A relatively small number of patients had symptoms more than 6 years prior to diagnosis for all of the histologic types. Headaches, visual impairment, focal seizures, external swelling, and paresthesias were the most common first symptoms, in that order. Seizures were the first symptom (31 per cent focal and 1.7 per cent generalized) more often with meningiomas of the convexities of the brain than of other sites. Seizures occurred sometime during the course of the illness in only 36.7 per cent of all cases in this study but in over 50 per cent of the convexity and parasagittal meningiomas.

The histologic subclassification of meningiomas into 5 groups defined in this study was neither reliable nor useful in predicting biologic behavior, with minor exceptions. Location and accessibility to surgery seemed to be more reliable indicators of prognosis, but even these factors yielded variable results. Subclassification of meningiomas into 5 or more varieties served only to emphasize the mixed and variable histologic elements that may predominate in a given area. Recognition of a neoplasm as a meningioma, regardless of histologic subtype, implied a slowly growing neoplasm unless unequivocal sarcomatous features were present. Some of the angioblastic meningiomas in this study were indistinguishable histologically from some cerebellar hemangioblastomas, except for location. Although mitotic figures were not infrequent in angioblastic meningiomas, the overall biologic behavior was not significantly different from the other nonsarcomatous varieties in this study, but other studies have suggested that this type may recur more rapidly. Only 1 of the tumors in this study was frankly sarcomatous at first operation. This number is rather low for a large series of meningiomas, but primary sarcomatous meningiomas are rare in our experience. On the other hand, sarcomatous changes in a meningioma after several operations and ionizing radiation over a period of several years were not unusual.

(*Continued on page 358*)

Postmortem Distribution Studies of Cyanide

Report of Three Cases

COLONEL PIERRE A. FINCK, MC, USA*

The purpose of this paper is to emphasize the value of toxicologic analysis of various samples of tissue and body fluids in the event of poisoning.

Illustrative Cases

Case 1. A 29-year-old Caucasian man registered one evening in an athletic club. He was in excellent health. The next afternoon at 3:00 o'clock he was found dead in his room. Autopsy performed 18 hours after the body was discovered revealed edema of the lungs and generalized congestion but no satisfactory explanation of the cause of death. The prosector did not notice any unusual odor. He submitted gastric contents, blood, and urine as well as samples of liver, kidney, and brain for toxicologic analysis. The toxicologist received the specimens in good condition 6 days after death. He reported a very small amount of cyanide in the gastric contents and liver, a lethal quantity in the blood and urine. The whiskey and the residue in the glass found in the room of the deceased contained no cyanide.

In such a case the pathologist faces a problem of interpretation. Is this inhalation or ingestion of cyanide? There is a lethal cyanide level in the blood but no significant amount in the gastric contents.

Further investigation of this case revealed that the employe of an exterminating company had failed to plug the holes in the walls where he sprayed cyanide to rid the place of insects. Cyanide gas leaked into the room of the victim, and he died by inhalation. The employe was charged with negligent homicide.

This example shows the value of analysis of different tissues and fluids. If in such a case only the gastric contents are analyzed the cause of death may be missed because of the very low cyanide concentration. If the blood alone is analyzed it may be wrongfully concluded that there was cyanide ingestion on the basis that there is a lethal level of cyanide in the blood and that ingestion causes most cyanide deaths.

In table 1 the distribution of cyanide in this case of inhalation may be compared with the next 2 cases involving ingestion.

	Inhalation	Ingestion	
	Case 1	Case 2	Case 3
	Mg. of cyanide in 100 Gm. or 100 c.c.		
Gastric contents	0.03	15	20
Lung		0.90	0.70
Blood	0.50	0.75	0.80
Liver	0.03	0.40	0.50
Kidney	0.11	0.35	0.40
Muscle		0.30	
Brain	0.07	0.25	0.06
Urine	0.20	0.20	
Fat		0.20	

* Toxicologic analysis by Leo R. Goldbaum, Ph.D., in accordance with methods reported in reference 1.

Case 2. A 48-year-old Caucasian man ingested an unknown amount of cyanide salt and died within 10 minutes. Several people attended the autopsy, performed 13 hours after death. Although everyone knew this was a case of cyanide ingestion, only a minority smelled the odor of bitter almonds. Postmortem examination revealed a bright pink lividity of face, lips, legs, and mucous membranes, caused by cyanmethemoglobin. The mucosa of the stomach showed a bright pink hue and petechiae but no ulcerations. There was no congestion, edema, or hemorrhage in the brain. In table 1 the column for case 2 shows that cyanide concentration of the gastric contents is higher than in the lung, blood, liver, kidney, muscle, brain, urine or fat.

It is evident that the concentration in the lungs is higher than that in the blood, liver, kidney, muscle, brain, urine or fat. Without a determination of the amount of cyanide in the gastric contents, which is much higher than in any tissue or fluid, one might wrongfully interpret this case as inhalation of cyanide on the basis of high concentration in the lungs.

Case 3. A Caucasian man aged 30 ingested an unknown amount of cyanide salt. He received oxygen by face mask and survived for over 1 hour. Autopsy performed 10 hours after death revealed acute erosive gastritis, severe cerebral congestion and edema, as well as petechiae in the white matter of the brain. In this case the concentration of cyanide is much higher in gastric contents than in any other sample (table 1, case 3).

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* Chief, Military Environmental Pathology Division, Armed Forces Institute of Pathology, Washington, D.C. 20305.

By comparing the case of inhalation with the 2 cases of ingestion, it is seen that the cyanide levels in gastric contents and liver are significantly higher in the cases of ingestion.

Conclusion

These 3 cases illustrate the importance of distribution studies for cyanide. With 1 sample only, especially when the specimen is poorly chosen, poorly preserved, or contaminated by chemicals, the case may remain unsolved.

By taking multiple samples of various body fluids and tissues we may increase the accuracy of toxicologic diagnosis, avoid errors of interpretation, and provide better medicolegal evidence. We cannot expect the toxicologist to give a satisfactory answer if the samples furnished by the pathologist are inadequate in size, number, or nature.

Contributing installations and prosectors: (Case 1) Ashburn General Hospital; G. R. Backus. (Case 2) Walter Reed General Hospital; P. Flanagan and P. A. Finck. (Case 3) Madigan Army Hospital; K. R. Dirks.

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Patients Needed at Clinical Center

Cystinosis. The coöperation of physicians is requested in the referral of patients with cystinosis to participate in studies being conducted by the National Institute of Arthritis and Metabolic Diseases at the Clinical Center, National Institutes of Health, in Bethesda, Md.

Of particular interest are pregnant women who are mothers of cystinotic patients. There is reason to believe that in utero diagnosis of cystinosis can be achieved. Thus the Institute is especially interested in studying women, as early in pregnancy as possible, who are at risk for giving birth to a cystinotic child.

Physicians who wish to have their patients considered for these studies may write or telephone Dr. Jarvis E. Seegmiller or Dr. Joseph D. Schulman, Clinical Center, Room 8-D-19, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-4781.

Breast Cancer. The coöperation of physicians is also requested in a continuing study of breast cancer being conducted by the National Cancer Institute at the Clinical Center of NIH. The study is designed to develop methods of delaying or preventing recurrences of breast cancer in patients with a high risk of recurrence following mastectomy.

Patients who meet the following criteria will be accepted for study:

1. Histologically proven breast cancer within 90 days following surgery.
2. Histologically positive axillary nodes.
3. Tumor limited to breast and axilla.
4. Preoperatively had no evidence of skin edema, satellite nodules, fixed axillary nodes, fixation of tumor to pectoral muscles, chest wall or skin.

Accepted patients will be followed in the Outpatient Department and will receive adjuvant chemotherapy in an attempt to improve their survival rates and diminish the number of recurrences of the disease.

Physicians interested in having their patients considered for this study may telephone or write Dr. Paul P. Carbone or Dr. V. T. DeVita, Clinical Center, Room 12-N-226, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-4251.

Meningiomas—Earle and Richany

(*Continued from page 356*)

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Solitary Mass in the Neck

MAJOR CHARLES B. JONES, MC, USA,* GUSTAVUS H. KLINCK, M.D.,†
AND CALVIN T. KLOPP, M.D.‡

A MASS IN THE NECK always stimulates the interest of the examining physician and has been a frequent topic of reports and papers.[1-12] Possibly no other location calls forth such a wide differential diagnosis to challenge the clinical acumen. Masses in the neck are most conveniently divided into 2 groups, midline (median) and lateral (table 1). The midline mass is the more frequent, with the thyroid as the usual source of origin. The solitary lateral mass in the adult most frequently represents carcinoma, and 80 per cent are carcinoma metastatic to a cervical lymph node. Delay in definitive diagnosis of a neck mass or the improper diagnostic approach can severely complicate future therapy and increase morbidity and mortality.

TABLE 1: Solitary Tumors of the Neck

- Midline tumors:
  - Thyroid origin
    - Lingual goiter
    - Thyroglossal duct cyst
    - Adenomatoid nodule
    - Adenoma
    - Chronic thyroiditis
    - Carcinoma
  - Delphian lymph node
  - Teratoma
  - Lipoma
  - Cutaneous tumors
- Lateral tumors:
  - Lymphadenopathy
    - Metastatic carcinoma
    - Lymphadenitis
    - Lymphoma
  - Thyroid origin (see under midline tumors)
  - Salivary gland enlargement and tumors
  - Branchial cyst tumors
  - Carotid body tumor, chemodectoma
  - Aneurysm, atrioventricular fistula
  - Cystic hygroma, lymphangioma, hemangioma
  - Hematoma
  - Abscess
  - Lipoma
  - Cutaneous tumors
  - Neurofibroma
  - Neurilemoma
  - Sarcoma
  - Laryngocele
  - Pharyngeal and esophageal diverticula
  - Cervical thymus

The Midline Mass

Tumors of the thyroid. The midline mass most frequently arises from the thyroid or a developmental anomaly of the thyroid. The thyroid originates from the epithelium in the region of the foramen cecum on the posterior portion of the tongue and maintains this connection as a narrow tube as the gland descends. During the fifth week of embryonic life this tubular connection, or thyroglossal duct, is normally obliterated. Developmental anomalies include incomplete descent, residual tissue along the path of descent, and excessive descent into the lower neck and mediastinum (figure 1).

Cysts of the thyroglossal duct are common. These are asymptomatic cystic swellings along the path of thyroid descent. Upward movement with swallowing can differentiate the thyroglossal duct cyst from the rare midline dermoid cyst. Removal of the cyst should include excision of the entire thyroglossal tract as well as the midportion of the hyoid bone, since the hyoid bone forms adjacent to the thyroglossal tract, usually behind, sometimes in front, or even around the path of descent.

A lingual thyroid (figure 2) is most rare and generally is an asymptomatic mass of the posterior tongue. It may represent a total failure of thyroid descent, and radioiodine scan is important to determine whether or not there is normally located thyroid tissue. Before removal of a lingual thyroid the patient must be fully counseled as to the necessity for lifetime thyroid therapy, if there is absence of normally situated thyroid.

Management of a clinically solitary nodule of the thyroid, whether "cold" or "hot" on radioiodine scan, requires surgical exploration. A thyroid lobectomy should be performed for the surgically solitary nodule. Diagnosis by frozen section technique should be obtained. The majority of these solitary thyroid nodules (90–95 per cent) are benign, usually either an adenomatous nodule or an adenoma. The adenomatous nodule is by far the more frequent and represents areas of benign adenomatoid epithelial proliferation and irregular accumulation of colloid. Degenerative changes within the adenomatous nodules are frequent and may produce rapid increase in size.

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* Chief, Special Projects Unit, Armed Forces Institute of Pathology, Washington, D.C. 20305.

† Chief, Endocrine Pathology Branch, Armed Forces Institute of Pathology, at the time this work was done.

‡ Warwick Professor of Surgery, George Washington University School of Medicine, and Medical Director, University Clinic, 2150 Pennsylvania Avenue, N.W., Washington, D.C. 20037.

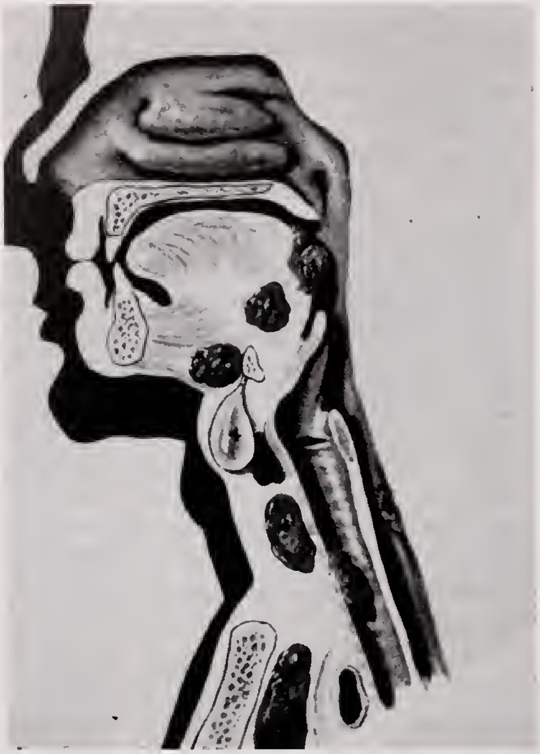

FIG. 1. Sites of aberrant thyroid tissue—drawing by F. Netter, M.D., from "The Thyroid Gland" (1945). Shown are lingual, intralingual, sublingual, pretracheal, normal, intratracheal, intra-esophageal, and intrathoracic locations. Also shown is a thyroglossal cyst. Reproduced by permission from the Armour Pharmaceutical Company, Chicago.

Approximately 8 per cent of the solitary thyroid nodules are carcinoma, 62 per cent of these being papillary carcinomas.[13, 14] The treatment of thyroid carcinoma is a matter of heated discussion.[13-17] Certainly the propensity for the carcinomas to metastasize to local lymph nodes is well known. In addition, intraglandular spread is frequent and may involve the contralateral lobe. Our recommended treatment is ipsilateral thyroid lobectomy, together with excision of the isthmus and subtotal contralateral lobectomy, leaving a small posterior portion of the contralateral lobe to assure preservation of parathyroid tissue. The removal of lymph nodes must, of course, include all clinically apparent nodes, but in general can be adequately performed without the necessity of removing the sternocleidomastoid muscle. Prognosis of the papillary and follicular carcinomas is good, although recurrent growths have been seen 10 or more years later. Medullary carcinomas comprise about 6 per cent of thyroid carcinomas and carry a less favorable prognosis.[18] The undifferentiated thyroid carcinomas, such as giant-cell carcinoma of the thyroid, are rare, are generally seen only in patients above 60 years, and have a poor prognosis.

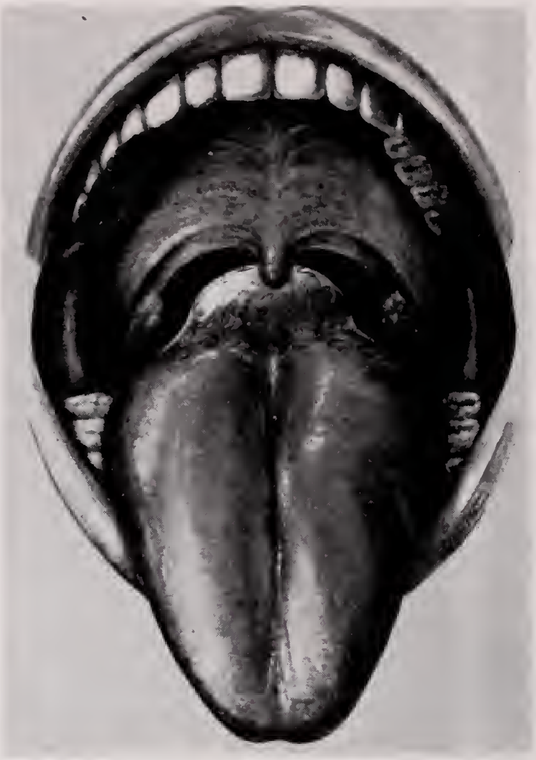

FIG. 2. Lingual thyroid (AFIP Neg. 69-2375).

Dermoid tumors. Dermoid tumors of the neck, either midline or lateral, are uncommon and represent congenital epidermal inclusions during embryonic closure. Movement with swallowing is not seen. They can usually be excised without difficulty.[19]

The Lateral Mass

Metastatic carcinoma. The lateral neck mass in the adult most frequently (80–85 per cent of cases) represents metastatic carcinoma.[2, 6, 7, 20] In fact, at least half of the malignant nasopharyngeal tumors are first detected by such cervical metastatic growths. In these cases the emphasis rests upon searching for the primary site, which is usually in the head or neck (lip, tongue, mouth, tonsil, nasopharynx or thyroid) but may be in the lung, breast, esophagus, stomach, kidney or elsewhere. If the primary tumor is found to be in the head or neck, treatment may involve en bloc removal of the primary mass together with the metastatic growth. Therefore, only after an exhaustive search fails to reveal the primary site should the metastatic tumor be biopsied, and then through a skin incision compatible with later removal of a possible primary tumor of the head or neck.

Salivary gland tumors. If not metastatic carcinoma, the lateral neck mass is most apt to be of salivary gland origin. The importance of bimanual examination to detect tumors of the salivary gland cannot be overemphasized. The most common site of involvement is the lower pole of the parotid gland. At least 85 per cent of these tumors occurring in the parotid region are benign, but only about 50 per cent of those in the submaxillary gland are benign.

The most common tumor in this group is the mixed tumor. The name arises from the histologic appearance of a mixture of epithelial elements and apparent cartilage. (In fact, the origin is entirely epithelial and the British term "pleomorphic adenoma" is appropriate.) To the operating surgeon the mixed tumor will characteristically appear deceptively well defined and even encapsulated. The growth pattern of the mixed tumor, however, involves small nests of tumor tissue extending into the adjacent tissues, and excision must include an adequate margin of normal tissue to assure removal of these nests. This can usually be achieved by a parotid hemilobectomy that preserves the facial nerve and includes a margin of at least 1 cm. An improper "shelling out" operation will leave islands of the tumor tissue behind, resulting in recurrence and far more difficult subsequent surgical procedures. A difference of opinion exists as to the incidence of malignant mixed tumors; possibly 10 per cent of all mixed tumors are malignant.

The benign Warthin's tumor is the second most frequent tumor of the salivary glands.[21] The synonym, papillary cystadenoma lymphomatosum, is quite descriptive of the histologic pattern of papillary and glandular columnar epithelium arranged over a lymphoid stroma containing germinal centers. The treatment is the same as for mixed tumor.

The malignant tumors of the salivary gland (25 per cent of all salivary tumors) in the early stages are clinically indistinguishable from the benign tumor. Extension into the adjacent structures results in the later stages in fixation, skin ulceration, or nerve involvement. Radical surgical removal is required. This group includes mucoepidermoid tumors, adenocarcinomas, and squamous-cell carcinomas.

Branchial cyst and sinus tract. The second branchial cleft extends along the region of the anterior edge of the sternocleidomastoid muscle. Embryonic retention of this structure results in residual cysts.[22] They can frequently be recognized by the location, the youth of the patient, and their cystic structure. On occasion the cysts become infected and develop a sinus tract. They may be symptomatic during pharyngeal infections because of the large amount of lymphoid tissue (resembling adenoid tissue) adjacent to the lining of the cyst. Removal should include excision of the entire tract extending toward the external ear.

Carotid body tumor. The carotid body tumor arises from the chemoreceptor tissue at the junction of the internal and external carotid arteries. These rare tumors (about 500 reported cases)[23] are nonfunctioning and only rarely malignant. The site of origin assists in the clinical recognition of the tumor. (The contralateral carotid pulse can be used to check this relationship.) Some side-to-side movement is possible, but movement in the vertical plane is not possible because of fixation to the arteries. Removal should be performed as early as possible because of their locally invasive behavior and should be done by developing a cleavage plane to prevent sacrifice of the internal carotid artery.[24] Resection may be inadvisable, however, if it risks cerebral ischemia by sacrifice or thrombosis of the internal carotid artery.

Lymphoma. In evaluating the solitary lateral mass in the neck the possibility of lymphoma must be kept in mind, particularly in the younger patient. If lymphoma is suspected, biopsy of the neck mass is indicated and a generous sampling of the larger, deeper nodes should be taken.

Neurofibroma, neurilemoma. The neurofibroma is found in the younger age group (mean age 15 years)[25] and may be a manifestation of von Recklinghausen's disease.[25, 26] The neurilemoma is more common in the adult. It is usually circumscribed and must be carefully removed in order to preserve the function of the involved nerve.

Cervical Mass in the Child

The occurrence of a midline mass in the neck of an infant should alert the physician to the possibility of incomplete descent of the thyroid gland.

Such a mass should not be surgically removed without prior thyroid scan to ascertain the presence of normally located thyroid tissue.[27]

The true midline teratoma of the neck is rare. Less than 100 cases have been reported, and the majority of these were benign and occurred in stillborn infants.[28, 29]

The cystic hygroma is a locally invasive tumor of lymphatic origin that is usually seen in children. The large, soft, fluctuant mass along the course of the sternocleidomastoid muscle is characteristic enough to permit recognition. Surgical removal must be complete to prevent recurrence but must involve as little disfigurement as possible.

Conclusion

Early definitive diagnosis of a mass in the neck is important. The midline mass of thyroid origin occurs most frequently. The lateral mass in the adult most commonly represents carcinoma metastatic to a cervial lymph node. Delineation of the primary carcinoma is essential in these cases, and an incorrect diagnostic approach can complicate future therapy and increase morbidity and mortality.

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Syringomyelia and Intramedullary Neoplasms

MAJOR DARWIN J. FERRY, MC, USA,* LT. COLONEL JOHN M. HARDMAN, MC, USA,†
AND KENNETH M. EARLE, M.D.‡

SYRINGOMYELIA is an uncommon disorder that usually follows a protracted course and is commonly associated with an intramedullary neoplasm. The frequency of syringomyelia and tumor, however, has varied from 16 to 58 per cent in published reports.[1, 2] The higher incidences have been found in cases examined primarily for intramedullary tumors, whereas the lower ones have been found in cases examined primarily for syringomyelia. Poser's comprehensive review of the literature revealed an incidence of 23 per cent in 454 spinal cords that were examined for either neoplasms or syringomyelia.[1]

This report presents a clinicopathologic review of the cases with syringomyelia coded in the files of the Armed Forces Institute of Pathology (AFIP). This study emphasizes the frequency and the nature of syringomyelia and intramedullary neoplasms of 38 cases.

Material and Methods

The material in the files of the AFIP was reviewed in a search for cases with syringomyelia. The material had been received from military, civilian, and Veterans Administration treatment facilities. In evaluation of these cases a thorough review of the available records and histologic material was made of 38 well-documented cases.

Sections for light microscopy from each case were stained with hematoxylin and eosin. In selected cases sections were also stained with phosphotungstic acid-hematoxylin, Masson's trichrome, Luxol fast blue, and cresylecht violet.

Clinical Data

Among the 38 cases studied, 32 were male, 4 were female, and in 2 the sex was not stated. Typically, these patients had protracted illnesses and symptoms and signs referable to the sites of spinal-cord involvement. Kyphoscoliosis was the most frequent anomaly associated with syringomyelia and was found in nearly a third of the cases. Other abnormalities were uncommon and included giant pigmented nevi, Arnold-Chiari malformation, hydrocephalus, café-au-lait spots, multiple cutaneous lipomas, and a sacral lipoma. Among the cases associated with tumor, the cerebrospinal fluid protein content varied from normal to greatly elevated levels. Those patients with tumors and subarachnoid blocks as determined by myelography had cerebrospinal fluid (CSF) protein levels that varied from 380 mg./100 ml. to 5.6 Gm./100 ml. Those cases without a block, however, had much lower protein levels, which ranged from 35 to 93 mg./100 ml. and averaged 70 mg./100 ml. The patients with syringomyelia had illnesses averaging 14 years; those associated with astrocytoma, 10 years; and those with ependymoma, 7.5 years. Their average at death was 40 years, and their ages ranged from 7 to 69 years.

Various modes of surgical and radiation therapy were given. The methods included decompressive laminectomy, cyst aspiration, syringotomy, subtotal excision of the tumor, and radiation. The survival times following treatment, however, were quite diverse and did not correlate with a particular form of treatment. The average survival of 3 patients with syringomyelia was 4½ years after treatment; of 13 patients with syringomyelia and either a well-differentiated astrocytoma or an ependymoma, the average survival was 7 years; and of the 3 patients with a mixed glioma, 2 years.

Pathologic Data

Among the 38 cases with syringomyelia, 29 patients also had an associated intramedullary neoplasm. Astrocytomas were found in half of these cases, ependymomas in nearly a third, and other well-differentiated tumors in the remainder. Table 1 gives the type and frequency of tumors found. Among the 15 astrocytomas, 14 were well-differentiated astrocytomas (12 were Grade I, and 2 were Grade II of Kernohan), and 1 was an anaplastic astrocytoma (Grade III–IV of Kernohan).

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* Chief Resident, Neurosurgery Service, Walter Reed General Hospital, Washington, D.C. 20012.

† Assistant Chief, Neuropathology Branch, Armed Forces Institute of Pathology, Washington, D.C. 20305.

‡ Chief, Neuropathology Branch, Armed Forces Institute of Pathology.

TABLE 1: Syringomyelia and Intramedullary Neoplasm in 29 Patients

	No. Cases	Per cent of Cases
Astrocytoma	15	52
Ependymoma	9	31
Glioma, unclassified	2	7
Hemangioblastoma	2	7
Ganglioglioma	1	3
TOTALS	29	100

The syrinx and the tumor were most frequently located in the lower cervical and upper thoracic spinal cord. The tumor was found within the syrinx in nearly half of the cases and commonly rimmed the cavity of the cyst and formed a discrete mass replacing the spinal cord parenchyma (figure 1). Occasionally, however, the neoplasm produced a mural nodule. In the other half of the cases the tumor was caudal to the syrinx more often than it was proximal to it. Although the syrinx extended from the medulla oblongata to the caudal end of the spinal cord in only 6 cases, 5 of these were associated with a tumor.

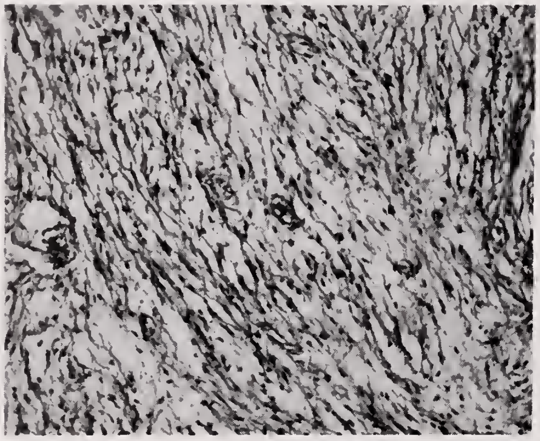

FIG. 1. Fibrillary astrocytoma (Grade 1 of Kernohan).

Aside from the usual histologic features of the tumors seen, Rosenthal's fibers were particularly common in or about the neoplasms. These unique structures were found in 17 of the cases of syringomyelia associated with neoplasms, whereas they were found only once in the cases with syringomyelia alone. These fibers were seen in 75 per cent of the astrocytomas and 63 per cent of the ependymomas; yet they were also seen in 1 nonglial tumor, a hemangioblastoma.

The syringomyelic cavity tended to be located dorsal to the central canal and involved the dorsal gray column preferentially (figure 2). Although the cavity occasionally was contiguous with the central canal and its ependymal lining, a true ependymal lining was not present. The wall was often formed, however, by a ring of astroglial tissue that could be most difficult to distinguish from a well-differentiated astrocytoma. Such a glial mantle is readily recognized; it lines the syringomyelic cavity of the cervical cord in figure 2. In addition, thickened, hyalinized, and dilated vessels often bordered the syrinx, yet such vessels were not accompanied by significant endothelial proliferation.

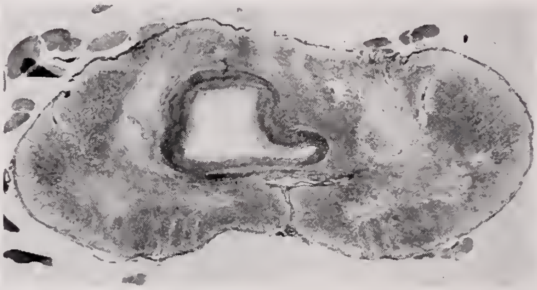

FIG. 2. Syringomyelia of cervical spinal cord. Note the ring of astroglial tissue lining the syrinx.

Discussion

A review of this series of cases once again emphasizes the frequent association of intramedullary neoplasms with syringomyelia. Only 38 well-documented cases with syringomyelia were available for study from the many thousands of neuropathologic disorders in the AFIP files. Surprisingly, 75 per cent of these patients had intramedullary neoplasms associated with syringomyelia. Although this relationship has been noted previously, the incidence of this combination has been quite diverse. In his exhaustive review, Poser[1] found intramedullary tumors associated with 16.5 per cent of syringomyelias, whereas syringomyelia was found in 31 per cent of spinal-cord neoplasms. At the Mayo Clinic 58 per cent of 33 autopsied intramedullary tumors were associated with syringomyelia.[2] The much higher incidence of tumors in this series is not entirely explained, but it may have resulted from the more frequent request for review of cases with tumors than cases without. We do not believe, however, that this high incidence is based on the nonspecific cystic degeneration that often accompanies primary tumors of the central nervous system.

The survival time of each of the histologic groups of tumors roughly corresponded to the degree of histologic differentiation of the neoplasms and was comparable to that reported by the Mayo Clinic for intramedullary tumors.[2] Many of the tumors contained Rosenthal's fibers, a finding that has been common to well-differentiated glial tumors of the central nervous system.[3] Even so, these unique structures have been more useful as a histologic sign of dysplasia or neoplasia than as a prognosticator, simply because they are rarely produced in the ordinary response of the nervous system to injury. The small number of cases in this series, however, precluded further evaluation of the various forms of treatment that the patients had received. Other reports, however, have indicated that following surgical treatment there will be symptomatic improvement in a third of the cases, that the disease will remain static in another third, and that it will progress unabated in the remainder.[4, 5, 6] Among such cases surgical intervention has been most beneficial in alleviating subarachnoid blocks caused by the syrinx or by an associated malformation of the spine.

Although the pathogenesis of syringomyelia with or without an associated neoplasm remains speculative, this study supports the thesis proposed by Mackay and Favill.[7] They believed that proliferation in the mesodermal and glial elements diverged to form both syringomyelia and the intramedullary neoplasms. In this respect they considered syringomyelia a neoplastic process and regarded syringomyelia at one end of the spectrum of such abnormal proliferations and the neoplasms on the other.

Summary

A clinicopathologic review of 38 patients with syringomyelia revealed associated intramedullary neoplasms in 75 per cent of the cases. This surprisingly high incidence of neoplasms supports the thesis that syringomyelia and intramedullary neoplasms may be related to the same proliferative process of supporting mesodermal and glial elements, even though they have diverse characteristics. Most cases had protracted clinical illnesses, and those related to intramedullary tumors had shorter clinical courses.

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Retinoblastoma*†

Including a Report of Illustrative Cases

LORENZ E. ZIMMERMAN, M.D.‡

One hundred sixty years ago James Wardrop of Edinburgh first delineated retinoblastoma as a distinct clinicopathologic entity. The retinoblastoma story that has unfolded since then is one of the most interesting in the field of neoplastic disease, and in it we find one of the most impressive records of achievement in the conquest of cancer. Excellent summaries of the historical development of retinoblastoma have been given by Dunphy[1] and by Duke-Elder and Dobree.[2] Some of the remarkable features that collectively add up to make retinoblastoma a unique neoplasm are the following:

Frequency and age distribution. Retinoblastoma is not only the most common intraocular neoplasm of childhood, but it is also one of the most frequent of all malignant tumors occurring during the first few years of life. Generally believed to be a congenital neoplasm,[3, 4] it has been variously estimated to range in frequency from a low of 1 case in 34,000 live births to a high of 1 in 14,000.[5] There are data indicating that the tumor is occurring more frequently. A part of this increased frequency is attributable to the fact that an ever-increasing number of patients are surviving, living to maturity, and having children of their own, some of whom will be affected genetically, but other, mostly unknown factors appear responsible for the major portion of this rising incidence.[5] While many well-documented observations of retinoblastoma have been made at birth or during the first few days after birth, most cases are not recognized until the second year of life. The incidence falls off sharply after the fifth year, though the possibility of retinoblastoma can never be excluded from the differential diagnosis in older children, as case 3 will illustrate. In a series of 760 cases on file in the Registry of Ophthalmic Pathology, however, only 5 patients were over 10 years of age.

Multicentricity. A very characteristic feature of retinoblastoma is its tendency to arise independently in multiple areas within the retina (figure 1).[3, 4, 6] It is not surprising, therefore, that bilaterality should be observed rather commonly.[2, 3, 4] A follow-up study of the 760 cases on file in the Registry of Ophthalmic Pathology revealed that 19.3 per cent were known to be bilateral. Important therapeutic considerations are the facts that bilaterality is virtually never the result of metastatic spread of the tumor from one eye to the other, and that it does not ordinarily alter the prognosis for life. Another important point with respect to bilaterality is the fact that in the great majority of cases the tumor is initially recognized only in one eye, and unless the child is examined carefully under anesthesia repeatedly over a period of at least a year, the presence of a small tumor in the opposite eye may be overlooked. Strangely, in bilateral cases the tumor tends to be recognized at an earlier age [2, 5] than in unilateral ones. In our own material the median age for 147 bilateral cases was 8 months, as compared with 20 months for 613 unilateral cases.

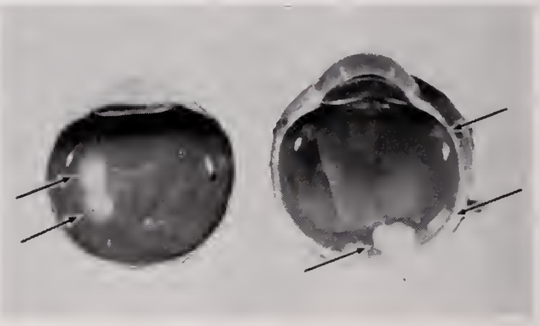

FIG. 1. Multiple foci of neoplastic change present (arrows) in the retina, a feature highly characteristic of retinoblastoma.

Heredity. Probably the most interesting, intriguing, and eugenically important feature of retinoblastoma is its striking tendency to be familial. No other truly malignant neoplasm of man has such a definite hereditary aspect. The familial cases are the result of the action of a dominant autosomal gene that exhibits variable penetrance in different families, some carriers of the gene failing to develop the tumor. Complete expressivity (i.e., total involvement of the retinas of both eyes of every genotypically affected member of the family) is probably unknown. While bilaterality is the rule in familial cases, one should never exclude the possibility of a genetically determined case simply because only one eye is involved. Sporadic (nonfamilial) cases of retinoblastoma are much more common, because the incidence of the familial type amounts to about 6 per cent of the sporadic.[5] Sporadic cases are probably the result of either a germinal or a somatic mutation. Germinal mutations are much the more important because they often produce bilateral tumors, and in the event that the patient survives and has children, there is the risk that half of them will be affected. Somatic mutations are believed to account for sporadic unilateral retinoblastomas in patients who subsequently do not produce affected offspring. These are said to be "phenocopies" of the inherited tumors. To date there is no way that either the clinical ophthalmologist or the ophthalmic pathologist examining a sporadic unilateral retinoblastoma can determine whether it was the result of a germinal or a somatic mutation. This fact, coupled with the observation that in 84 per cent of unilateral cases the tumor is multicentric, makes one wonder if, indeed, there are these 2 different types of retinoblastoma. The sporadic unilateral tumors in patients who subsequently produce no progeny with retinoblastoma could also be considered the result of a genetic mutation in which the gene has an exceptionally low order of penetrance and expressivity.

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* From the Registry of Ophthalmic Pathology of the Armed Forces Institute of Pathology.

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‡ Chief, Ophthalmic Pathology Branch, Armed Forces Institute of Pathology, Washington, D.C. 20305; Clinical Professor of Ophthalmic Pathology, George Washington University School of Medicine.

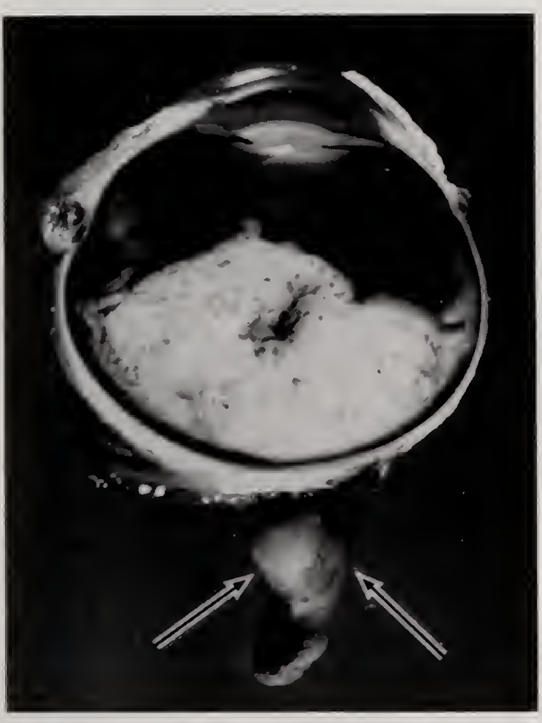

FIG. 2. Large retinoblastoma has invaded and greatly thickened the optic nerve (arrows), but fortunately the surgeon severed the nerve sufficiently posterior to the involved portion.

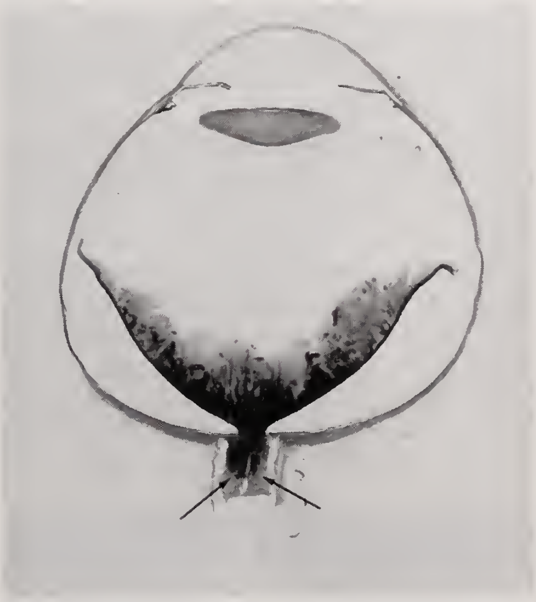

FIG. 3. Diffuse retinoblastoma with invasion of optic nerve back to level indicated by arrows, but with no infiltration of uveal tract.

Prognosis. Until the turn of the century, retinoblastoma was a tumor that rarely failed to claim the child's life. With the development of anesthesia and the increasing acceptance of the concept of early removal of the eye (enucleation) late in the 19th century, the survival rate rose from 5 per cent in 1869, to 17 per cent in 1897, to 57 per cent in 1916.[1] A most important contribution to this improvement in surgical results was von Graefe's suggestion that the optic nerve should be severed as far back in the orbit as feasible at the time of enucleation (figure 2).[1] This suggestion was based on the histopathologic demonstration that retinoblastoma typically spreads from the retina out of the eye via the optic nerve and its meninges (figure 3). It took many years for this principle to become widely appreciated and put into actual practice. Reese,[4] for example, in a histopathologic study of 119 eyes enucleated during the period from 1878 through 1929 found that 43 per cent of the tumors had invaded the optic nerve to the plane of surgical transection. A similar study of 116 eyes enucleated during the period 1934 through 1947 showed tumor at the plane of surgical transection in only 9 per cent. The prognostic value of careful appraisal of optic nerve invasion was brought out dramatically in a histopathologic study based on 300 cases in our Registry.[7] We found that when the tumor did not invade the optic disc the survival was 91.6 per cent. If the tumor had invaded the optic nerve proper but not as far back as the plane of surgical transection, the survival was only 55.6 per cent, but when the tumor was judged to have reached the plane of surgical transection the survival was reduced to 36.0 per cent.

Another exceedingly important factor that has made possible ever-increasingly satisfactory results in the management of retinoblastomas has been earlier diagnosis. In the days when retinoblastoma was just becoming recognized the typical patient presented himself with a necrotic fungating mass that destroyed the eye and filled the orbit, hence the early names "fungus hematodes," "fungus medullous," "spongoid tumor," and "encephaloid cancer," which were fashionable during the period 1805 to 1864.* The horrible picture of an infant with advanced orbital involvement (figure 4) or metastatic disease when first seen is rarely encountered today in the more highly civilized countries that have good medical care and a more highly educated population. Such advanced cases as those shown in figures 5 and 6, however, are still the rule in many parts of the world where medical education and medical manpower are still extremely deficient. Kodilinye[8] reported that 13 of his 14 patients had extraocular extension when they were first seen at the University College Hospital in Ibadan, Nigeria, and in 4 there was clinical evidence of intracranial invasion. He commented that because there were no survivors in Nigeria there was no familial retinoblastoma. I believe that in our country parents along with such nonophthalmologic physicians as general practitioners, pediatricians, and obstetricians are today generally alert to the potential seriousness of any apparent deviation from normal that may be seen in the eyes of a newborn infant or older baby, and that because of this alertness the ophthalmologist today has the great advantage of having affected children

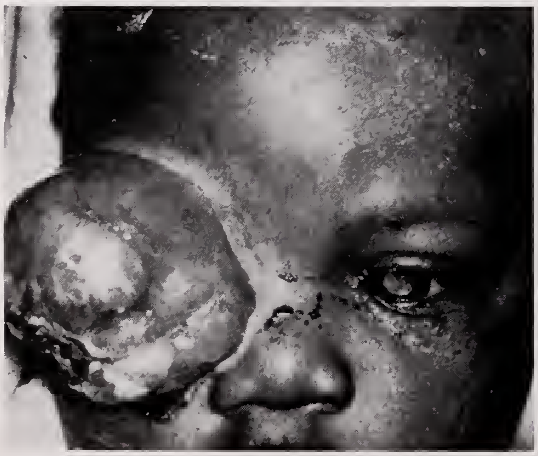

FIG. 4. Bilateral retinoblastoma in an 18-month-old American girl. Although tumor of right eye is quite advanced, the tumor of the left one is still confined within the eye. Case contributed by Dr. Victor T. Curtin, Bascom Palmer Eye Institute, University of Miami.

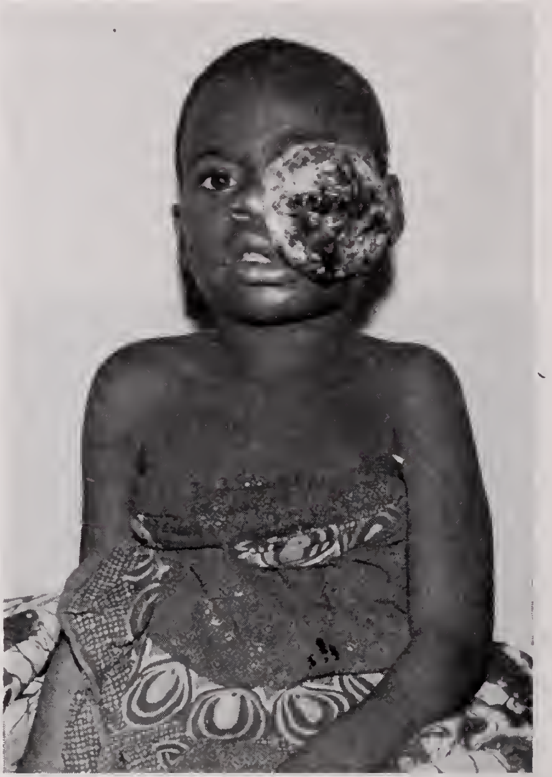

FIG. 5. Advanced retinoblastoma in a native African child seen in the eastern Congo. Photograph obtained through courtesy of Dr. Daniel H. Connor.

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* In 1864 Virchow named the tumor "glioma of the retina," which became the most popular and widely used designation until Verhoeff proposed the term "retinoblastoma" in 1922.[1]

referred to him at an earlier age. In a series of 760 retinoblastoma cases on file in the Registry of Ophthalmic Pathology the average age of the child at the time of enucleation was nearly 3 years for cases received from 1917 through 1943, while for those received from 1955 through 1960 the average patient came to enucleation about 11 months sooner (table 1). During the same periods the survival rose from about 50 per cent to about 78 per cent.

TABLE 1: Relationship of Age of Patient at Enucleation to Survival in 760 Retinoblastomas

Time Period (76 Cases in Each Group)	Mean Age at Enucleation (*Months*)	Survival*	
		Patients Traced	Per cent Alive
1917–1934	35	67	46
1934–1939	32	72	54
1939–1943	34	72	54
1943–1946	28	73	64
1946–1948	30	75	69
1948–1950	28	71	72
1950–1952	23	73	67
1952–1954	27	67	67
1955–1957	24	63	71
1957–1960	22	56	86

* The last follow-up study was made in 1965 after each living patient had survived at least 5 years.

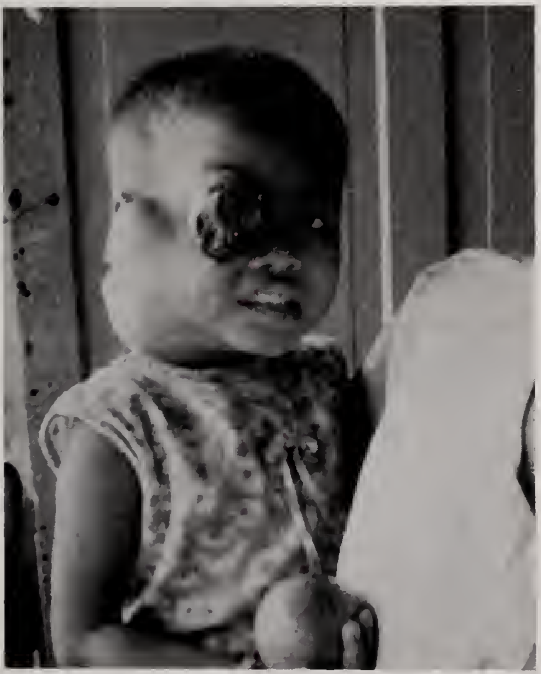

FIG. 6. Advanced retinoblastoma with preauricular and cervical lymph-node metastasis in a 6-year-old Laotian girl. Case contributed from the Dooley Foundation, Vientiane, Laos, by Dr. James C. Dinneen.

This, in turn, has made possible even greater therapeutic advances. Now the ophthalmologist is no longer content merely to save the child's life. His present objective is to preserve useful vision while not jeopardizing the child's chances for normal life expectancy. Today, with the great advances that have been made in radiation therapy and chemotherapy[9-16] and with the added availability of photocoagulation[12, 16, 17] when deemed necessary, 90 to 100 per cent cures can be achieved in favorable cases, without enucleation.[12,13,16] In less favorable cases (i.e., larger tumors and tumors located anteriorly in the retina), control of the tumor by use of these nonsurgical methods can still be attained in about one-half the cases. The degree of useful vision that remains is related to the location of the original lesions and the extent of retinal involvement. Destruction of the tumor by radiation therapy or photocoagulation will lead to destruction also of that part of the retina in which the tumors are located. If the macula lutea is involved it will be destroyed and the eye will no longer be useful for reading or for other tasks requiring fine-point discrimination, but if other portions of the retina are spared, the eye will still be very useful for peripheral vision.

Spontaneous regression. There is probably no other malignant neoplasm that shows such a striking tendency toward spontaneous necrosis. Extensive areas of necrosis with calcification are observed in the majority of retinoblastomas. Unfortunately, however, complete regression leading to a spontaneous cure is rarely observed, but a number of well-documented cases have been recorded.[4, 18] In most such cases the tumor had originally attained a large size before undergoing complete necrosis, and the end result was a blind phthisical eye containing the fossilized tumor. Extremely rare are the cases in which a very small tumor regressed, permitting useful vision to remain. Various theories have been advanced in an effort to explain the curious tendency for retinoblastomas to become necrotic, but I do not believe any of them have much merit. Against the idea that some systemic reaction (e.g., an immunologic response to the tumor) may be responsible is the curious fact that while spontaneous regression is taking place in one eye the tumor in the fellow eye may not only remain viable but may spread out of the eye, as illustrated in figure 7.

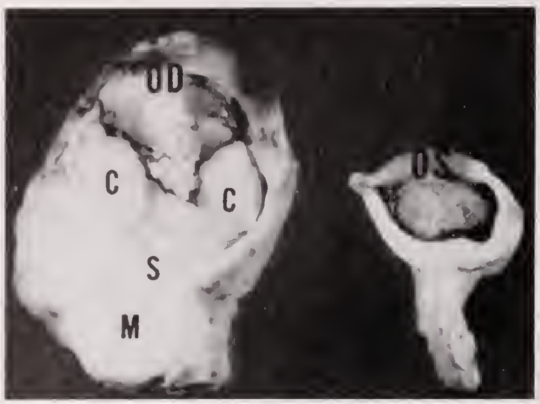

FIG. 7. Bilateral retinoblastoma. Though spontaneous regression has led to phthisis bulbi on the left side (OS), the tumor in the right eye (OD) has massively invaded the choroid (C) and sclera (S) and formed a large retrobulbar mass (M).

Clinical Recognition

Since the ultimate results that can be achieved therapeutically in terms of the preservation of vision as well as of life are so dependent upon early recognition of the tumor, and since this in turn is dependent upon early referral of patients to the ophthalmologist, it becomes evident that stress must be placed on educating the parents to bring the baby in for examination any time they have any concern that anything might be abnormal about his eyes. The single most important early sign is an abnormal-appearing pupil (figures 8 and 9). Normally the pupil should be round and jet black. If it appears gray, white, or yellow or deviates in any way from the normal round, black aperture in the iris, a careful ophthalmologic examination is indicated. By far the most frequent sign observed by the parent is this whitening of the pupil (leukokoria). Leukokoria does not always prove to be the result of a retinoblastoma since there are many other conditions that can be responsible (figures 10 and 11),[19, 20] but as a sign of retinoblastoma it is of paramount importance.

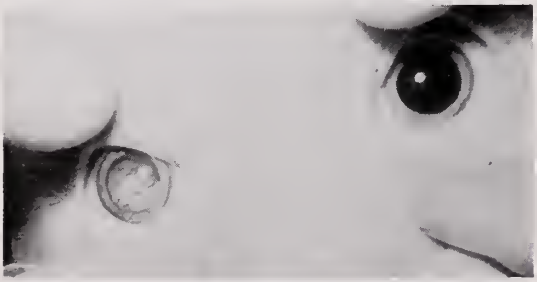

FIG. 8. Advanced leukokoria, O.D., in a 15-month-old boy, produced by a huge exophytic retinoblastoma that pushed the retina far forward. The retinal blood vessels coursing over the tumor had been observed by the mother, who described them as "red veins in the pupil." Case contributed by Dr. Marvin Kwitko of Montreal, Canada.

Another important early sign is a poorly fixing eye or actual strabismus (although the vast majority of cases of strabismus are not the result of retinoblastoma). When the tumor arises in the macular area (figure 12) it is most likely to lead to impaired fixation and strabismus, and in such cases a squint may become quite noticeable before any pupillary abnormality is observed by the family.[21]

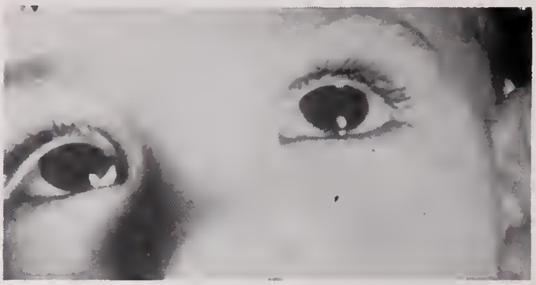

FIG. 9. Subtle, slightly mottled grayish discoloration of left pupil. Case contributed by Dr. Robert W. Harger of Indianapolis, Indiana.

While leukokoria and strabismus are the 2 most common early signs, the very smallest lesions are generally picked up on careful ophthalmoscopic examination of the newborn baby. Whenever there is a family history of retinoblastoma, especially if one of the parents happens to have been a survivor of retinoblastoma, the baby should be examined soon after birth and repeatedly during the first year of life if no tumor is found at the initial examination. Figure 13

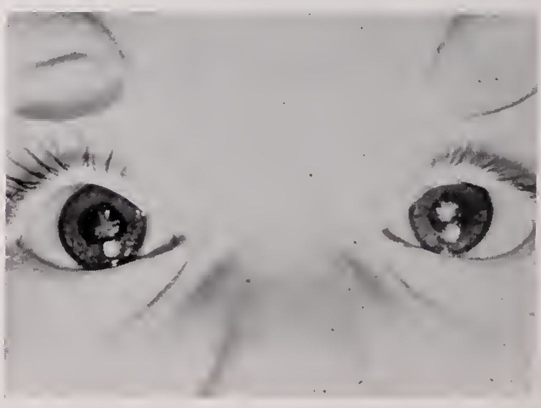

FIG. 10. White reflections observed through pupils are produced by opacities in the lens (congenital cataracts). Photograph contributed by Dr. Fred C. Williams of San Francisco.

reveals an eye enucleated from a 7-day-old baby whose mother and 1 sibling had had retinoblastoma.

Since retinoblastomas grow large and produce a great variety of complications, including retinal detachment, secondary glaucoma, cataract, intraocular hemorrhage, inflammation (uveitis, endophthalmitis, or panophthalmitis), and proptosis, retinoblastoma must be considered in the differential diagnosis of many diseases of the eye and orbit. This tumor does not metastasize early while the primary lesion is still small, as retroperitoneal neuroblastomas may do. Undoubtedly this is one of the most important biologic characteristics of retinoblastomas, accounting for its high rate of curability.

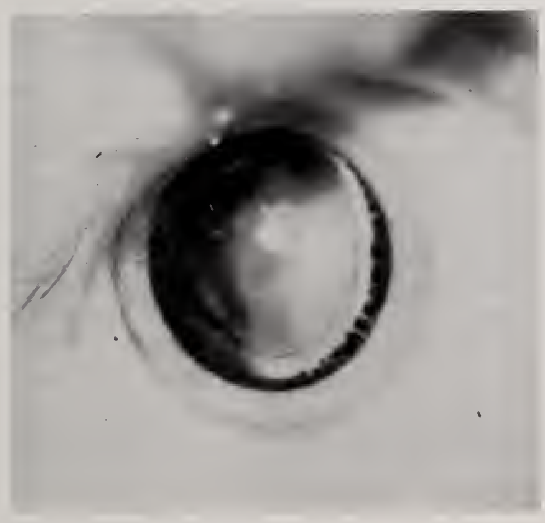

FIG. 11. Leukokoria produced by congenital malformation of the vitreous body (persistence and hyperplasia of the primary vitreous). Photograph contributed by Commander Bernard Blais, U. S. Naval Hospital, San Diego.

The following case reports have been selected, not to illustrate typical cases but to show some of the pitfalls of clinical diagnosis and also to record some of the great clinicopathologic variations that may be encountered.

Report of Cases

The first case illustrates the consequence of not appreciating the significance of leukokoria.

Case 1. An 18-month-old girl was referred to the Bascom Palmer Eye Institute of the University of Miami because of a huge mass that filled the right orbit. A white pupillary reflex had been noted since birth, but the attending physicians had advised only "observation." Nothing was done therapeutically until the tumor progressed to the stage shown in figure 4. There was obvious involvement of the left eye also.

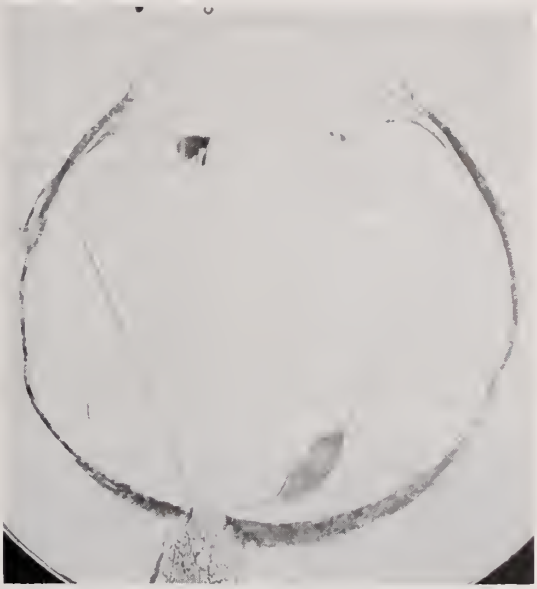

FIG. 12. Small retinoblastoma in macular area that produced an esotropia in a 12-month-old baby. The patient's twin was also found to have a retinoblastoma.

The following case illustrates several points: (1) that retinoblastoma must be considered in the differential diagnoses of an inflamed eye; (2) that retinoblastoma may be encountered in a phthisical eye; and (3) that every enucleated eye should be submitted for histopathologic examination.

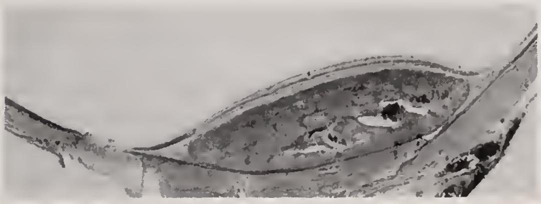

FIG. 13. Eye enucleated for retinoblastoma on seventh day of life. Tumor had been discovered shortly after birth when baby was examined in the nursery because mother and older sibling had had retinoblastoma.

Case 2. A 17-month-old Caucasian girl was admitted to the hospital with a history that several days earlier she had developed tonsillitis with fever, for which she received antibiotic therapy. Although the fever responded to therapy, the child became lethargic and refused to eat. Two days before admission the left eye became inflamed and edematous. Examination of the injected left eye revealed a hazy cornea, marked aqueous flare, and many large floaters. All that could be seen in the fundus was a poor red reflex. A diagnosis of uveitis was made, and the patient was treated with Chloromycetin® and prednisolone systemically and with atropine and Neo-Delta-Cortef® locally to the left eye. She was discharged and followed as an outpatient. The inflammation subsided, and the eye became blind and phthisical. Five months after the onset of symptoms the left eye was enucleated. Three months later the patient was readmitted because of a white mass that had been observed for 6 weeks in the right eye. A diagnosis of retinoblastoma was made, and this eye was enucleated. This specimen was sent to an ophthalmic pathology laboratory, where the clinical diagnosis of retinoblastoma was confirmed. Subsequently, the phthisical left eye that had been enucleated earlier and filed away without histopathologic examination was obtained, examined, and found to contain an almost completely necrotic retinoblastoma.

With the aid of that valuable instrument, the "retrospectroscope," we can point out several errors in the management of this case. First of all, it is apparent that nobody who originally saw this child during the initial hospitalization considered the possibility of retinoblastoma. Second, it is also quite evident that a careful ophthalmoscopic examination of the asymptomatic right eye was not made during the period that the left eye was being treated for uveitis and phthisis bulbi. Certainly a careful examination with the child anesthetized could have led to a correct diagnosis at least 8 months earlier, and possibly the eye might have been saved by radiation and chemotherapy at that time. Finally, the surgeon who enucleated the eye and the hospital pathologist erred in not insisting on a prompt histopathologic examination of the specimen.

The following case* illustrates the point that, regardless of the patient's age and even in the face of a seemingly obvious relationship of the ocular complaints to recent trauma, one cannot exclude the possibility of the presence of a retinoblastoma.

Case 3. An 11-year-old girl was seen because of pain and swelling in the right eye. She gave a history of recent "insect injury" to this eye. The eye was large, soft, and proptosed, and there was marked chemosis. The ulcerated cornea had ruptured, and the lens was absent. A diagnosis of post-traumatic panophthalmitis was made, and the eye was enucleated. When the eye was opened in the laboratory the anterior chamber was found to be filled with necrotic material, blood, and remnants of the lens, while posteriorly the entire globe was filled with white, friable, largely necrotic tumor tissue. Microscopically there was a mycotic ring abscess that had perforated the cornea, but most of the eye was filled with a largely necrotic retinoblastoma that had massively invaded the choroid and optic nerve up to the plane of surgical transection.

It is obvious that this eye must have been blind and disfigured for quite some time before it was injured. It also seems evident that though the mycotic infection of the cornea and the subsequent perforation of the ulcer may well have been the result of an "insect injury," the panophthalmitis with its resultant proptosis and chemosis were most likely produced by the necrotic tumor. This case and the preceding one underscore the importance of considering retinoblastoma as a cause of ocular inflammation in children. A recent study at the Armed Forces Institute of Pathology has shown that in 6.6 per cent of 618 cases of retinoblastoma inflammatory signs led to a primary diagnosis of, and treatment for uveitis, endophthalmitis, or panophthalmitis.[23] In these cases the mortality rate was much higher (61 per cent) than in the correctly diagnosed cases (25.5 per cent mortality). These data emphasize the importance of being alert to the possibility that an inflamed eye in a child may be the initial clinical manifestation of retinoblastoma.

The following case illustrates the extent of involvement that may be observed at birth and serves to document the prenatal origin of retinoblastoma.

Case 4. At the time of delivery a female Negro infant was observed to have a ruptured right cornea. The mother, who was preëclamptic, had been admitted for delivery by cesarean section, but she went into labor and delivered the baby spontaneously (no forceps applied). The cornea of the right eye appeared thin and ectatic. In the inferotemporal quadrant there was a rupture, through which bloody fluid was draining. The eye was enucleated 2 days after birth. The preoperative diagnosis was "ruptured right globe and corneal ectasia, cause unknown; massive intraocular hemorrhage." When the hospital pathologist, Dr. G. H. Hilbert of Pensacola, Fla., examined the specimen grossly he observed that the optic nerve appeared to be diffusely thickened and firm. A cross section of the nerve at the plane of surgical transection revealed an "anaplastic malignancy . . . most probably an undifferentiated retinoblastoma." The eyeball was sent to the Registry of Ophthalmic Pathology, AFIP, where we confirmed the suspicion of retinoblastoma (figure 14). The tumor had filled the eye posteriorly, massively infiltrated the choroid, and thickened the nerve 2 to 3 times its normal diameter.

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* This case has been recorded, with photographic documentation, by Spaulding and Naumann.[22]

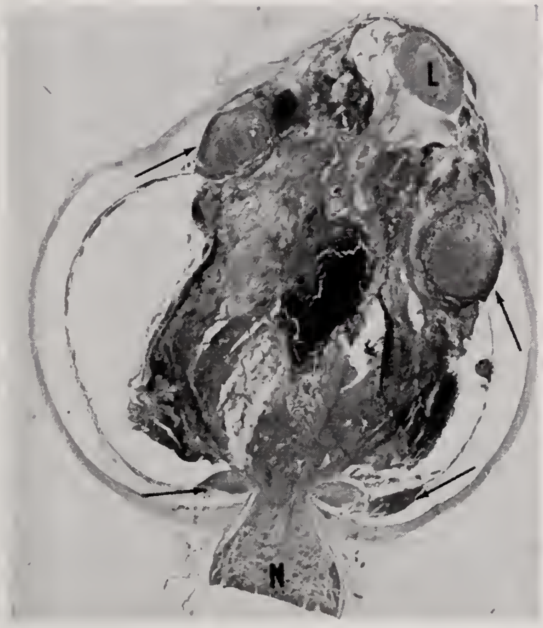

FIG. 14. Congenital retinoblastoma that led to rupture of cornea and enucleation of eye on second day after birth. Tumor has not only replaced entire retina but has completely destroyed internal architecture of eye, displaced lens (L) against extremely thin cornea, invaded uvea (arrows), and massively thickened optic nerve (N).

Finally I should like to record a case of historical interest:

Case 5. A 3-year-old Negro boy was admitted to the Children's Hospital of Washington, D.C. on April 25, 1917, because of a painful, protruding right eye. The child's parents were siblings. There was a history of eye trouble since birth, assumed to have been gonorrheal in origin, and sight had been lost for 1 year. Several months before admission the eye had become swollen and painful. The markedly congested, chemotic, proptosed right eye was enucleated the night of admission by Dr. D. K. Shute, who contributed the specimen to the Army Medical Museum. The clinical diagnosis is unknown, and no information is available about the ophthalmoscopic appearance of the left eye. On macroscopic examination the specimen, which measured 6.0 by 3.3 cm., was "not recognizable as an eye." After bisection (figure 15) the eye was identified within the mass. It contained a tumor that had eroded through the cornea, presenting anteriorly as a fungating mass. There was a much larger neoplastic mass in the orbital tissues behind the globe. Microscopically the tumor was "everywhere composed of small mononuclear round cells." The histopathologic diagnosis was "small-round-cell melanotic sarcoma" of probable choroidal origin.

This case is of historical interest for several reasons. First, it represents the first surgical specimen (bearing AFIP Accession No. 6) contributed to the old Army Medical Museum in what constitutes our current series of accessions, numbering as of this writing in excess of 1,306,000 cases. It is the first eye in a collection now totaling more than 66,000 cases in the Registry of Ophthalmic Pathology. Second, it shows the typical picture of advanced retinoblastoma with massive extraocular extension that was so commonly present at the time of enucleation in those days. Third, as the caption on the Museum jar indicates (see figure 15), the histopathologic diagnosis was melanosarcoma instead of retinoblastoma.

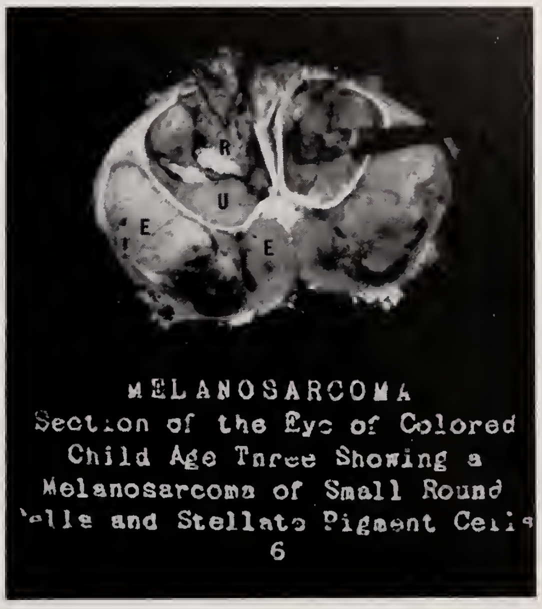
R
U
E
E
MELANOSARCOMA
Section of the Eye of Colored
Child Age Three Showing a
Melanosarcoma of Small Round
ells and Stellate Pigment Cells
6

FIG. 15. This retinoblastoma (R), erroneously labeled a "melanosarcoma" when it was accessioned in 1917, exhibits the massive uveal invasion (U) and extraocular extension (E) that were so often observed at time of enucleation during early years of this century. This picture is a photograph of specimen as it was mounted for display in a museum jar of old Army Medical Museum.

Since this was the first eye received and inasmuch as the staff pathologists at the Army Medical Museum at that time did not include anyone experienced in ocular pathology, it is perhaps not so surprising that the massive choroidal invasion by retinoblastoma should have been mistaken for a "melanosarcoma" of the uvea. Today, any first-year resident would be sufficiently knowledgeable to rule out a melanoma in the differential diagnosis of a tumor (of any location) in the case of a 3-year-old non-Caucasian. Finally, since consanguinity of parents of a child with a hereditary disease always suggests the action of an autosomal recessive gene as the causative factor, this tumor could well represent the result of genes on 2 homologous chromosomal loci other than those associated with the usual familial variety of retinoblastoma. As Weller[24] pointed out in his excellent paper on the inheritance of retinoblastoma, the apparent sporadic nature of most cases of retinoblastoma is precisely that which should be expected with a recessive mode of inheritance, but because consanguinity appears in so few retinoblastoma families there is not much positive evidence in support of a recessive factor.

Summary

Retinoblastoma is one of the most interesting of all malignant neoplasms. Once an almost universally fatal form of cancer, and still about 100 per cent lethal in some areas, the tumor can be effectively controlled if detected early and managed properly. In such cases the cure rate approaches 100 per cent. With modern methods of radiation therapy combined with such adjuncts as chemotherapy and photocoagulation it is possible in selected cases to control the tumor without surgery and salvage useful vision. Emphasis must be placed on education of parents, general practitioners, and pediatricians as to the importance of any visible pupillary alteration or other ocular abnormality as an early sign of retinoblastoma and the urgency for ophthalmologic consultation in such cases.

Use of the unpublished data from a study of all cases of retinoblastoma on file in the Registry of Ophthalmic Pathology undertaken by Dr. Walter R. Stafford, formerly a Special Fellow in Ophthalmic Pathology at the Armed Forces Institute of Pathology, and the statistical analysis of some of these data by Mr. Benjamin L. Parnell, Chief, Medical Statistics Branch, Armed Forces Institute of Pathology, are gratefully acknowledged.

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Investigation of Sudden Death in Addicts*

With Emphasis on the Toxicologic Findings in Thirty Cases

COLONEL EDWARD H. JOHNSTON, MC, USA,† LEO R. GOLDBAUM, PH.D.,†
AND RICHARD L. WHELTON, M.D.‡

A MAJOR PROBLEM in the investigation of sudden deaths of drug addicts has been the failure to isolate and identify the narcotic substance in tissues and body fluids. A recent paper[1] has indicated that analytical techniques are not available for the detection of specific chemical agents. It was emphasized that in the absence of toxicologic confirmation, the autopsy findings coupled with the investigative data might be used to make the diagnosis of intravenous narcotism.

The Toxicology Branch of the Armed Forces Institute of Pathology has developed a procedure[2] that can be used to determine very low concentrations of morphine in biologic samples. A series of 30 cases of sudden death in narcotic addicts was studied by this procedure. In addition, all available tissues were studied for histopathologic alterations. All of the case material was contributed to the Registry of Forensic Pathology, Armed Forces Institute of Pathology, by the Office of the Coroner, District of Columbia.

Results

Toxicologic findings. All organs and body fluids submitted to the laboratory were hydrolyzed so that the presence of morphine, both free and conjugated, could be determined. The identification and quantification of morphine is made by the characteristic ultraviolet spectrum following extraction. The distribution of morphine in body fluids and tissues from 22 cases of sudden death caused by intravenous narcotism is given in table 1. The distribution of morphine in 8 cases of addicts dying of causes other than intravenous narcotism is shown in table 2.

Histopathologic findings. The gross and microscopic findings in patients dead from intravenous narcotism have been well documented.[1] The tissue alterations in the present series of addicts did not differ from those previously described, except for additional alterations in the lungs. The pulmonary vessels revealed a number of very early lesions produced by intravascular foreign material. The number of cases and types of foreign material are shown in table 3.

Discussion

The results of the analyses of these 30 cases indicate that in every case the presence of morphine was detected by our toxicologic procedure. The isolation of narcotic was made even in those addicts in whom death occurred soon after an intravenous injection. Morphine was identified and the quantity determined in bile, urine, kidney, and in some instances in blood and liver. The concentration of morphine in the kidney appeared to indicate whether an intravenous injection was made just prior to death. Concentrations of 0.2 mg./100 Gm. of morphine or more were present in the kidneys only of those with a history of sudden death caused by intravenous narcotism (table 1), and the concentrations were much lower in addicts found dead from other causes (table 2). In case 29, in which the addict was killed instantly by a gunshot wound of the chest, the history indicated a recent intravenous injection. The possibility of a recent injection is supported by the finding of a concentration of 0.15 mg./100 Gm. in the kidney, which is almost as high a level as in some of the cases listed in table 1. The concentrations of morphine in the bile and urine of the cases in both tables 1 and 2 show little significant difference and are probably attributable to morphine remaining in the body from previous injections of narcotics.

Tissue from the lungs and other organs was studied microscopically in 18 of the 30 cases.

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† Toxicology Branch, Armed Forces Institute of Pathology, Washington, D.C. 20305.

‡ Coroner, District of Columbia, 19th and E Streets, S.E., Washington, D.C. 20002.

TABLE 1: Sudden Deaths from Intravenous Narcotism

Case No.	AFIP Acc. No.	Age	Sex	History	Morphine Levels (mg./100 Gm. or ml.)					Other Material
					Kidney	Bile	Urine	Liver	Blood	
1	1231115	32	M	Found unconscious on bathroom floor by wife. Known narcotic user. Eleven-year-old son had seen him use narcotics in bathroom. Narcotic paraphernalia in bathroom.	0.5	1.9	1.5	0.5	—	
2	1307996	19	M	Found unconscious in bathroom. DOA at hospital. Was an addict suspect in room of another addict. Policeman saw recent needle mark. Narcotic paraphernalia in room.	0.25	1.3	0.5	—	—	Quinine in liver, 0.3 mg./100 Gm.
3	1307988	34	M	Found semiconscious at 0620. Taken to hospital. Dead at 0930 hr.	0.35	5.0	—	—	—	Quinine in liver
4	1307994	17	M	Found unconscious in bed at 1300 hr., "probably dead." DOA at hospital at 1525.	0.30	7.0	2.0	—	—	Quinine in liver, 0.3 mg./100 Gm.
5	1307989	37	M	Found on bathroom floor face down by mother, probably dead. Had vomited and complained earlier of not feeling well. Known epileptic seizure 4 yr. ago. DOA at hospital.	0.2	1.5	3.5	—	—	Quinine in liver, 0.3 mg./100 Gm.; in urine, 0.5 mg./100 ml.
6	1307987	22	M	Found sitting on commode unconscious at 1330 hr. DOA at hospital. Friend saw blood from area on forearm, syringe on bathroom floor and other paraphernalia. Old needle marks on arms.	0.40	5.0	4.0	—	—	Quinine in liver, 0.2 mg./100 Gm.
7	1307982	45	M	Found unconscious at bottom of stairs, dead? DOA at hospital. Suspected of overdose. Needle marks on arm.	0.10	8.0	2.0	—	—	Alcohol in blood, 200 mg./100 ml.
8	1308001	30	M	Found unconscious on floor of female narcotic's bedroom. She was a known prostitute. DOA at hospital.	0.2	0.5	—	0.15	0.01	Quinine in kidney, 0.2 mg./100 Gm.
9	1232863	19	M	Found unconscious on bed in room by mother. DOA at hospital. Had history of asthma. Old needle scars on arms.	0.2	0.1	0.32	0.25	0.05	
10	1242273	21	M	Found face down on back seat of his car, dead. Small amount of vomitus noted when body was moved.	0.25	—	—	0.14	0.01	
11	1251474	45	M	Found unconscious on the bathroom floor. A needle was still in his left arm.	0.20	0	0	0.2	0.02	
12	1251475	41	M	Found unconscious on bathroom floor. DOA at hospital. Two suspicious areas on right arm. Narcotic paraphernalia in nearby room. Known addict.	0.12	—	—	0.18	—	Quinine in liver
13	1308003	20	F	Found dead in wheelchair in hospital emergency room. Put there by 3 men who requested a wheelchair. Was known addict, on parole from prison. Recent needle mark on arm, with hemorrhage.	0.8	—	0.2	—	—	
14	1307983	22	M	Found unconscious in bed.	0.4	5.5	2.5	—	—	

TABLE 1: Continued

Case	AFIP Acc. No.	Age	Sex	History	Morphine Levels (mg./100 Gm. or ml.)					Other Material
					Kidney	Bile	Urine	Liver	Blood	
15	1307991	18	M	At 1230 he was found sitting in a chair, unconscious, "maybe dead," by roommate. DOA at hospital at 1430. Narcotic equipment found in the room. Old needle marks on arms.	0.3	2.0	1.0	—	0.1	Quinine in liver, 0.3 mg./100 Gm.
16	1249308	23	M	Found unconscious on floor of laundry room. DOA at hospital 3 hr. later. Narcotic paraphernalia found in room. Stocking still around arm. Ten and one-half empty gelatin capsules on floor. On parole from jail. Recent needle marks on arms.	0.1	3.0	0.6	0.12	—	
17	1251470	26	M	Known addict for 5 yr.; found unconscious in chair in bedroom. DOA at hospital. Had trouble breathing—foam came out of mouth. A colleague was present, probably gave him the injection. No narcotic equipment in room.	0.2	6.7	0.9	0.05	0.01	
18	1308187	16	M	Found unconscious in bed. DOA at hospital. Narcotic paraphernalia found in his bedroom.	0.34	5.5	—	0.04	0.05	
19	1308004	31	M	Found in bathroom. Known narcotic user; was patient in Lexington, Ky. Left sleeve rolled up and blood on left forearm. No narcotic equipment. Died in hospital 18 hr. later. Constricted pupils.	—	10.0	0.4			
20	1249307	23	M	Found unconscious on street. DOA at hospital 15 min. later. Known to use narcotics. Old needle scars on skin of both arms.	—	0.6	0.2	Less than 10 μg./100 Gm.	—	
21	1307992	19	M	Found unconscious in living room, recent injection marks on skin of arm. DOA at hospital.	0.35	6.5	5.0		0.1	
22	1308186	25	M	Found unconscious in hallway. DOA at hospital. Recent injection site on left arm. Narcotic equipment near body.	0.40	4.0	4.5	—	—	Quinine in liver, 0.3 mg./100 Gm.

The presence in the pulmonary vessels of foreign material that was doubly refractile with polarized light stimulated the careful study of all available lung tissue by this technique. As a result, in 14 of the cases found to have foreign material in pulmonary vessels, 12 had foreign bodies that were refractile to polarized light. In 10 cases the refractile crystals were identified as talc. In one a pulmonary vessel showed an organized thrombus containing talc as well as nonrefractile foreign material (figure 1). A smaller pulmonary vessel from another case contained talc near a foreign body giant cell together with crystals free within the lumen (figure 2). A recent embolus composed of a cotton fiber was found in case 9 (figure 3), which was in contrast to a phagocytized fibril of a cotton fiber in another case (figure 4). Case 19 had one vessel with a foreign body giant cell containing carbon particles (figure 5), while in other vessels of the lung, talc was identified. In one case the foreign material was not refractile.

Granulomatous vasculitis in pulmonary vessels has been reported to result from the intravenous injection of narcotics and drugs intermixed with talc.[3] No attention has been directed to the very early lesions in the lungs of narcotic addicts and the need for routine screening of this tissue with polarized light. Because the capillary com-

TABLE 2. Deaths in Addicts from Causes Other Than Intravenous Narcotism

Case No.	AFIP Acc. No.	Age	Sex	History	Morphine Levels (mg./100 Gm. or ml.)					Other Material
					Kidney	Bile	Urine	Liver	Blood	
23	1307995	23	M	Homicide case. Had just held up liquor store. Shot by policeman as he ran away. DOA at hospital.	0.08	5.0	0.2	—	—	—
24	1309185	22	M	Homicide case. Shot during robbery of store. Old injection scars on arms.	0.02	0.5	0.2	—	—	—
25	1307990	24	M	Was operating an auto at high speed, went through red light, failed to make turn, and hit tree. No skid marks. DOA at hospital.	0.04	0.10	1.0	0.05	—	Quinine in liver, 0.02 mg./100 Gm.
26	1307981	22	M	Homicide case. Was known addict found dead in his driveway. Died of gunshot wound of chest.	0.09	5.5	6.0	0.1	—	Quinine in liver, 0.4 mg./100 Gm.; in urine, 1.2 mg./100 ml.
27	1307986	31	F	Known narcotic user found unconscious 0830. DOA at hospital at 1130. Had been sick, vomited, had the "shakes." Eating many cough drops. Had fallen in bathroom earlier in morning.	0.02	1.0	0.5	0.02	—	Quinine in liver, 0.1 mg./400 Gm.
28	1307999	38	M	Found unconscious in chair. DOA at hospital. Had been in hospital before for narcotics.	0.05	1.6	—	0.05	0.1	—
29	1307998	21	M	Homicide case. Was shot through chest by another addict while attempting to steal narcotics. Had old needle scars on arms.	0.15	12.0	20.0	0.16	—	Quinine in urine, 3.5 mg./100 ml.
30	1307993	18	M	Homicide case.	—	2.0	0.3	—	—	Quinine in urine, 0.2 mg./100 ml.

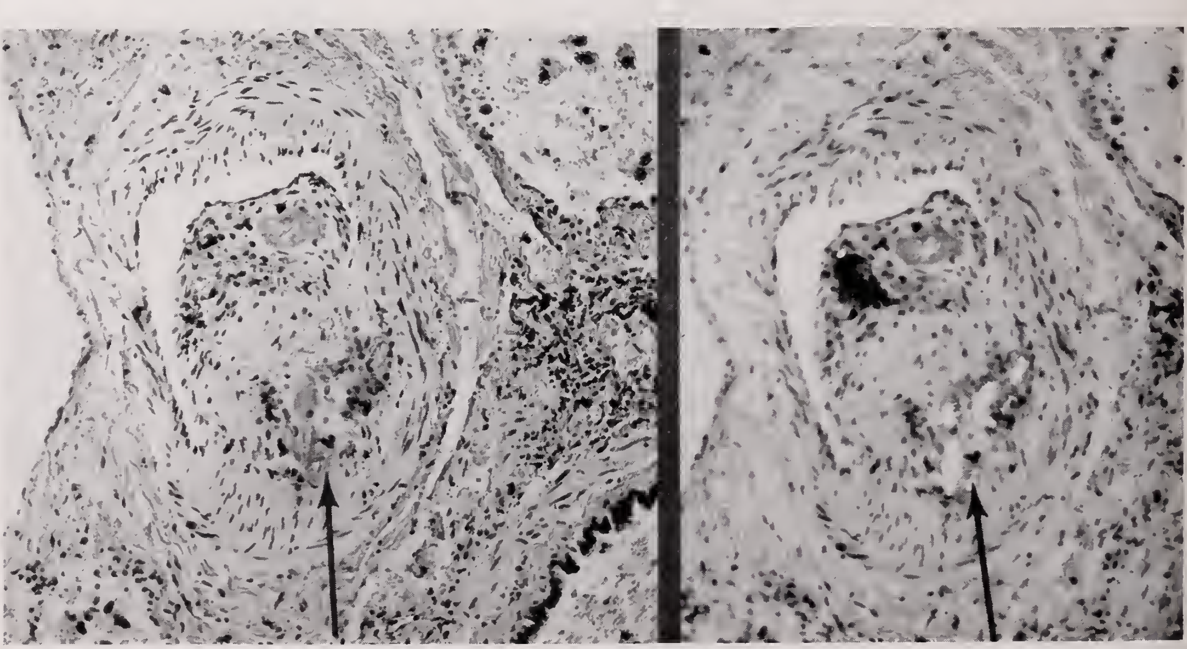

FIG. 1. Lung tissue with a thrombus in a pulmonary vessel. The thrombus contains both refractile and nonrefractile foreign material. Arrow points to material identified as talc. Photograph on the right is with polarized light.

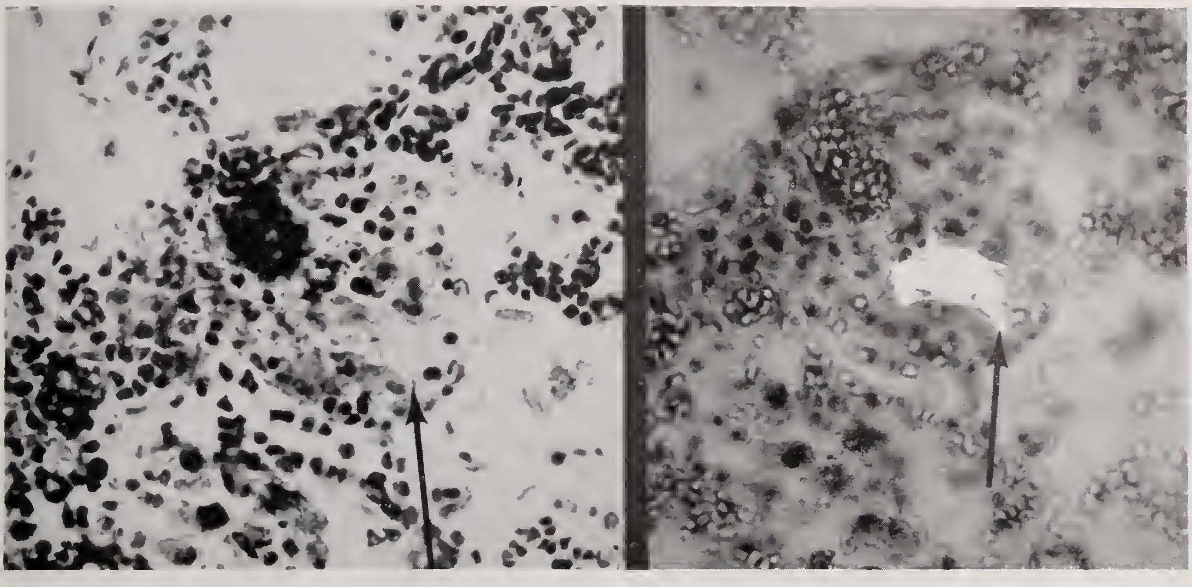

FIG. 2. Lung tissue with talc crystals (arrow) in lumen of a pulmonary vessel. One crystal is near a foreign body giant cell. Photograph on the right is with polarized light.

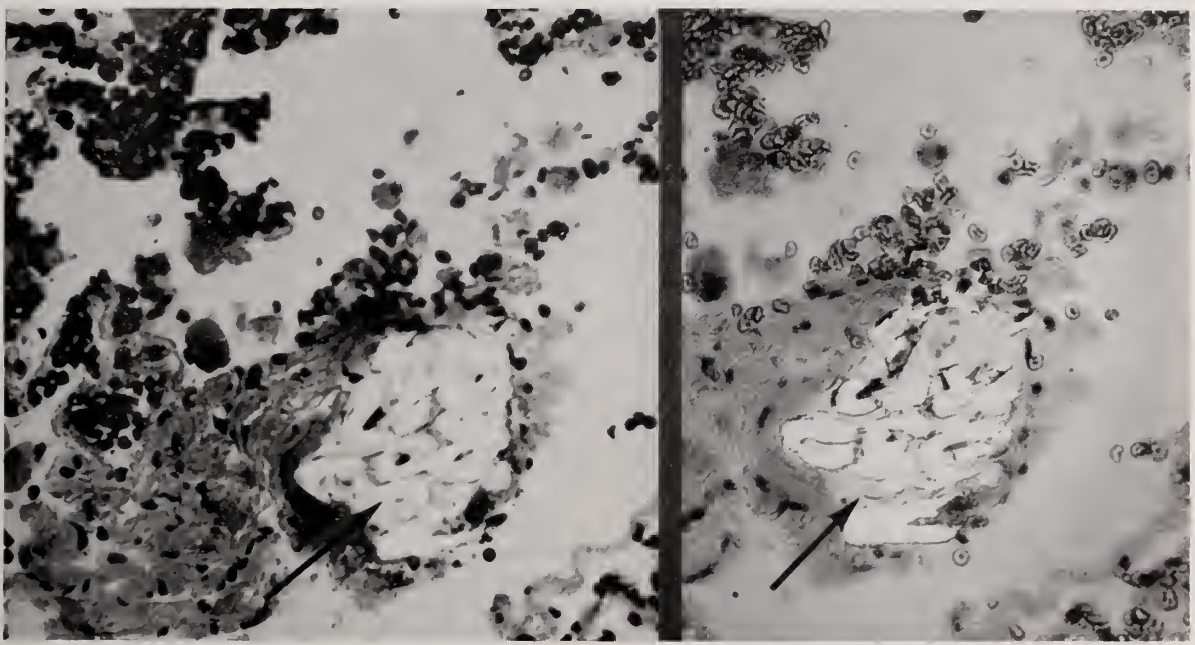

FIG. 3. Lung tissue with a cotton fiber (arrow) as an embolus in a pulmonary vessel. Photograph on the right is with polarized light.

plex of the lungs is a primary screening filter for the blood containing the intravenous injected material, these vessels must be carefully examined for the foreign substances introduced by the faulty and unclean techniques of the addict.

Conclusions

Morphine was detected in the body tissues and fluids of 30 cases of sudden death following intravenous injection of narcotic. The concentration of morphine in the kidneys appears to be a good indicator of death occurring after a recent

TABLE 3: Foreign Material in Lung Tissue of 18 Cases Examined

Total number with intravascular foreign material	14
Number with crystals diagnosed as talc	10
Number with embolic cotton fibers	2
Number with particles diagnosed as carbon	1
Number with unidentified foreign material	1

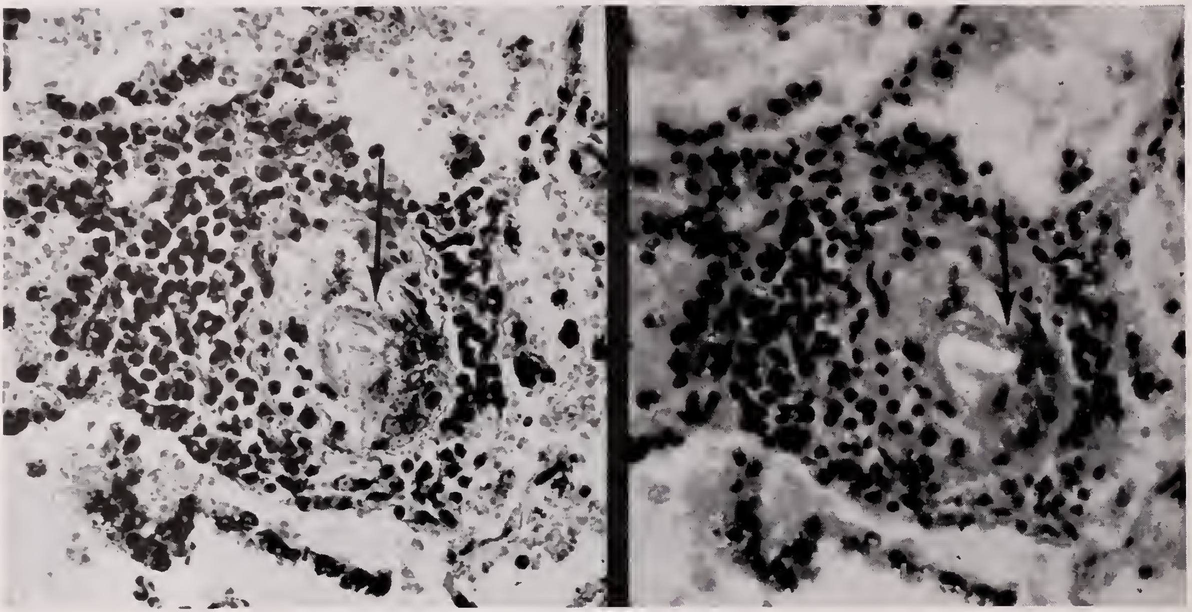

FIG. 4. Lung tissue with a phagocytized cotton fiber (arrow) in a small pulmonary vessel. Note associated inflammatory reaction. Photograph on the right is with polarized light.

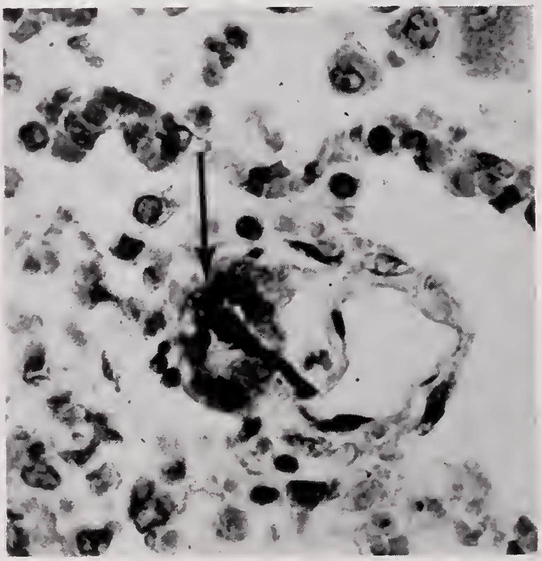

FIG. 5. Lung tissue with a small pulmonary vessel having in its lumen a foreign body giant cell containing carbon particles (arrow).

injection of narcotic. Morphine was detected in the bile and urine, but the concentration was not a good indicator of a recent intravenous injection. Foreign material was found in the pulmonary vessels. This material can produce very early lesions that may easily go undetected. Polarized light should be used routinely in the microscopic examination of lung tissue in addicts.

Mr. Philip H. Santinga, Office of the Coroner, District of Columbia, gave valuable technical assistance in this study.

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Sudden Unexpected Death of a Two-year-old Child from Thrombosis of Both Coronary Arteries with Aneurysmal Dilatation of the Vessels

Report of a Case

CORNELIUS J. BURNS, M.D.,[*] AND WILLIAM C. MANION, M.D.[†]

Coronary arterial lesions are rare in the infant and young child. Seldom are they diagnosed clinically, an accomplishment restricted chiefly to anomalies of origin and number; most often they are findings at autopsy. Among the coronary arterial lesions occurring in this age group thrombosis is rare, particularly so when it is associated with aneurysmal dilatation of the involved vessel or vessels. Because of its unusual nature and because it was totally unexpected, we believe that this case is worthy of reporting.

Report of Case

A 2-year-old Caucasian boy was dead on arrival at the emergency room of the hospital on January 30, 1964. The child was one of several siblings, none of whom had been ill recently. He was the product of a term delivery following an uncomplicated pregnancy, and findings from his initial and subsequent physical examinations were normal. There were no known congenital defects. A review of his past history revealed that on 2 occasions he had a high fever for several days, and that on one of these occasions he had been evaluated at the emergency room of the hospital. One week prior to death he again became ill with fever and cough and was seen by his physician, who diagnosed bronchitis and tonsillitis. He was given Chloromycetin®, 100 mg. intramuscularly, and Chloromycetin Palmitate® was prescribed. He was seen 2 days later, on the evening before his demise. His physician thought that he was not ill enough for hospitalization, although he appeared no better than at the time of the previous examination. At this time he was given another injection of Chloromycetin, 100 mg. He was last seen alive about midnight on January 29, 1964, and appeared in no acute distress. He was found in his bed at approximately 7:30 a.m. the next day and was pronounced dead on arrival at the hospital emergency room.

The autopsy examination was performed 3 hours after death and included an examination of the central nervous system. The major findings were limited to the heart, and only the findings of that organ will be described.

Autopsy findings (heart). The heart weighed 170 Gm. (normal weight, 56 Gm.); it was greatly enlarged, and its contour was distorted by the marked enlargement of both the right and left coronary arteries (figure 1). The apex of the heart was formed by the left ventricle, the lateral wall of which was dilated and had an aneurysmal-like bulge. The epicardium had a few small tags

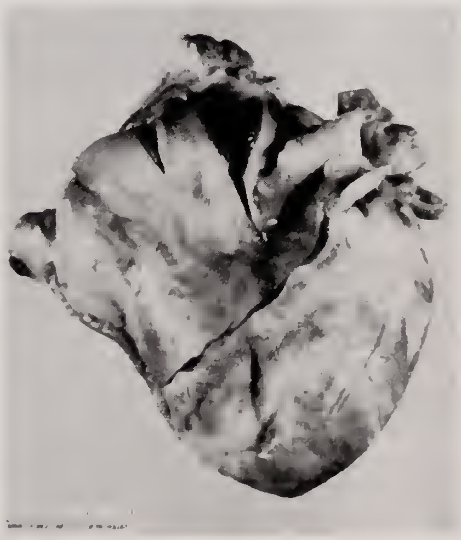

FIG. 1. Anterior surface of heart showing its abnormal contour, caused chiefly by enlarged thrombosed right coronary artery, which has elevated right atrial appendage. Bulge caused by enlarged left coronary artery is also apparent. Apex of heart is formed primarily by left ventricle. A slight bulge of lateral wall of left ventricle is evident.

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[*] Chief of Pathology, Prince George's General Hospital, Cheverly, Md. 20785.

[†] Chief, Cardiovascular Pathology Branch, Armed Forces Institute of Pathology, Washington, D.C. 20305.

on the anterior surface of the heart and at the apex. The right coronary artery was greatly enlarged and elevated the right atrial appendage.

Internal examination revealed the endocardium of the right atrium to be smooth and glistening. The foramen ovale was closed. The coronary sinus appeared normal. The tricuspid valve was normal and measured 6.5 cm. in circumference. The wall of the right ventricle at the level of the anterior papillary muscle measured 6 mm. in thickness. There were several small opaque areas present on the endocardium of the ventricle. The pulmonary valve, which was 4.5 cm. in circumference, had 3 thin, translucent cusps. A small accessory coronary artery arose from the sinus of Valsalva behind the left cusp of the pulmonary valve. The endocardial surface of the left atrium appeared slightly opaque. The mitral valve measured 5.5 cm. in circumference, and there was a small, round, smooth-edged opening, presumed to be congenital, present in the posterior leaflet of the mitral valve. The left ventricle was greatly dilated, and there was marked trabeculation of the endocardium in the apical region. The wall of the left ventricle measured 1 cm. in thickness at the level of the posterior papillary muscle, but it thinned progressively to 3 mm. in thickness at the apex. The outflow tract of the ventricle was smooth, and the membranous septum was intact. There were 2 normal-sized coronary ostia present—one in the right and one in the left sinus of Valsalva (figure 2). The immediate ascending aorta appeared normal. The right coronary artery, beginning immediately at its emergence from the aortic wall, sharply increased in size until it reached a diameter of 2 cm. The enlargement of the vessel continued around the border of the right side to the posterior surface of the heart, decreasing to normal size in the region of the crux (figure 3). The left coronary artery, beginning at its exit from the aorta and continuing for a distance of 3 cm. to the origin of the anterior descending branch, was similarly enlarged, but only to a diameter of 1.8 cm. The proximal portion of the circumflex branch was also enlarged for a distance of 1.5 cm., but only to a diameter of 8 mm. The dilated portions of both the right and left coronary arteries, as well as the circumflex branch, were filled with reddish-brown clotted material (figure 4). A lumen was not recognized in these segments on gross examination, and only in the distal and unin-

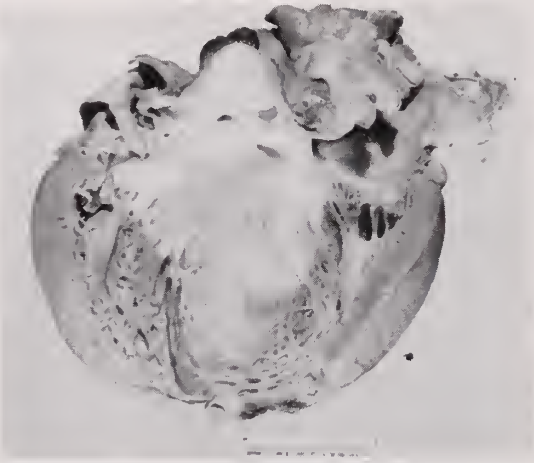

FIG. 2. Opened left ventricle of heart, showing trabeculation and dilatation. Note thinning of ventricular wall in apical region and normal size of coronary ostia.

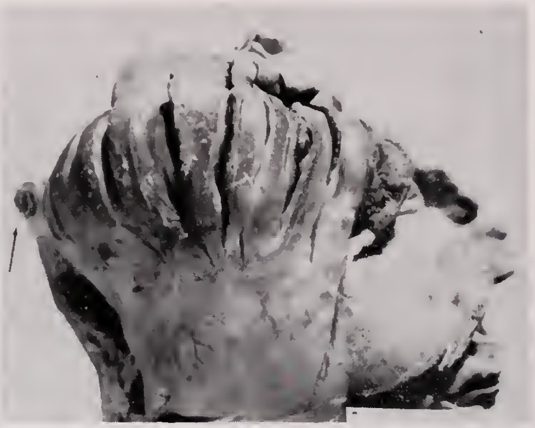

FIG. 3. Incised right coronary artery, showing extension of lesion onto posterior surface of heart. Distal end of thrombosed portion of circumflex branch of left coronary artery is seen along left edge of photograph (arrow).

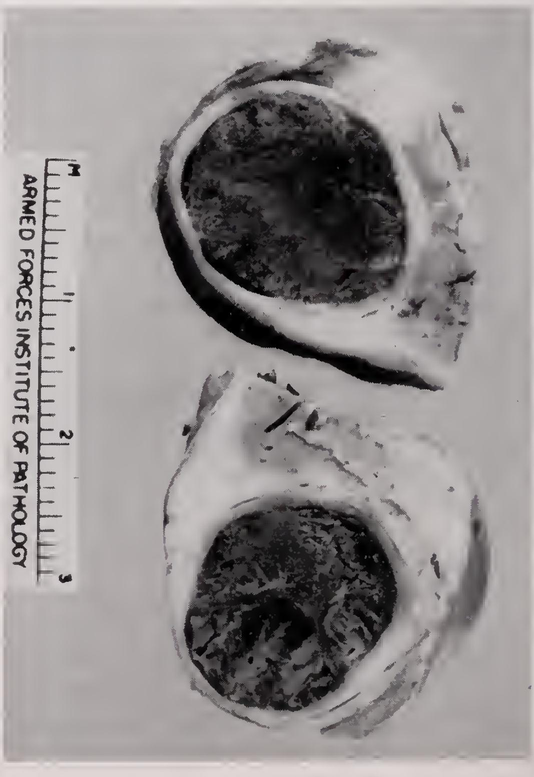

FIG. 4. Segments from right coronary artery showing its dilated thin wall and luminal contents. Left main coronary artery and proximal portion of circumflex branch were similar in appearance.

volved portions of these vessels was a lumen apparent; here the sizes of the vessels were normal. Cut section through the lateral wall of the left ventricle revealed a brownish-red cut surface with small, scattered, yellow areas and streaks. Marked thinning of the left ventricular wall was noted, especially at the apex. Cut sections through the interventricular septum revealed an increased resistance to the knife focally, as well as the presence of small, scattered, yellowish-white streaks, more prominent in the distal portion of the septum. The aorta arose normally and followed the usual course; its intimal surface was smooth and glistening. No other vascular lesions were noted. The lungs, liver, gallbladder, pancreas, adrenals, kidneys, urinary bladder, spleen, gastrointestinal tract, and genitalia were examined and, save for congestion, did not appear remarkable.

Microscopic findings. The right and left coronary arteries manifested similar changes. Both vessels were greatly enlarged, and their lumina were filled with clotted blood. Although a lumen was not visible in either vessel upon gross examination, microscopic examination revealed a minute central channel in the clot of both vessels that might have served as a lumen (figure 5). The blood clot, even at the periphery, exhibited little in the way of organization, and in all areas the clot appeared to be of recent development. The intima of the vessel was thickened; in places the endothelial surface was missing, being replaced by a layer of deeply eosinophilic fibrinoid material. In other fields, material that stained similarly was present immediately beneath the endothelium. The internal elastic membrane was missing in some places and was replaced by fibrous connective tissue containing a large amount of acid mucopolysaccharide. The muscular layer of the media was for the most part destroyed; it was replaced by fibrous tissue. Muscle fibers, when present, were limited chiefly to the external portion of the media. Focally, both the media and adventitia were infiltrated with leukocytes, including polymorphonuclear neutrophils, lymphocytes, and histiocytes. The adventitia of the vessels was greatly thickened, and there was early periarterial fibrosis. In a section from the right coronary artery a small thrombosed vessel was present in the periarterial tissue, the wall of which was acutely inflamed and partially destroyed. In addition to the lesions of the major extramural arteries the walls of the secondary extramural branches were thickened and their lumina considerably narrowed, chiefly by an increase in fibroblastic connective tissue and mucopolysaccharide in the intima (figure 6). The internal elastic membrane in some of these vessels was destroyed in some areas, and there were fibrous scars in the media. Many of these vessels had a peripheral mantle of collagenous connective tissue. There were foci of thickening in the epicardium, with light infiltration by leukocytes, including lymphocytes, plasma cells, and neutrophils. The myocardium contained old, recent, and acute lesions. They included focal areas of dense scarring, recent muscle loss, acute necrosis of muscle (characterized chiefly by a tinctorial change), and abscesses (figures 7 and 8). Lesions were present in all portions of the myocardium but were most marked in the inner two-thirds and in the papillary muscles. Focal interstitial myocarditis was present in some fields. The muscle fibers appeared hypertrophied, and their nuclei varied considerably from field to field, many appearing normal and others large and hyperchromatic. In some fields, chiefly adjacent to areas of muscle necrosis, muscle fibers with large, often irregularly shaped, hyperchromatic nuclei were present, usually intermixed with

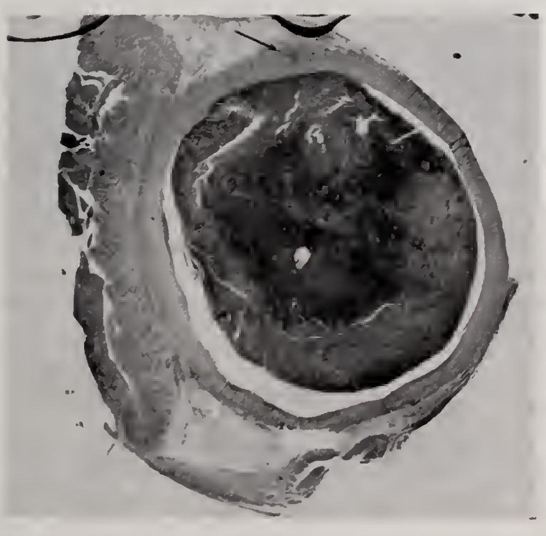

FIG. 5. Photomicrograph of cross section of right coronary artery. Small central lumen can be seen in thrombus. Wall of vessel is thin, and muscularis of media is replaced for the most part by fibrous tissue. An acutely thrombosed small vessel is indicated by the arrow.

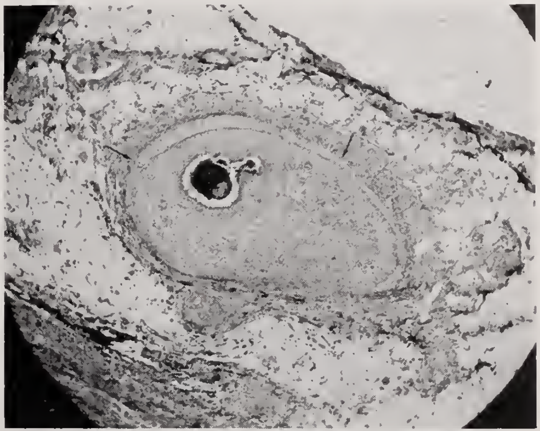

FIG. 6. Section of a secondary extramural artery. Caliber of lumen is greatly reduced because of fibrous thickening of intima. Internal elastic lamina is missing in some places, and there is partial replacement of media by fibrous connective tissue (arrows). Periarterial fibrosis is present.

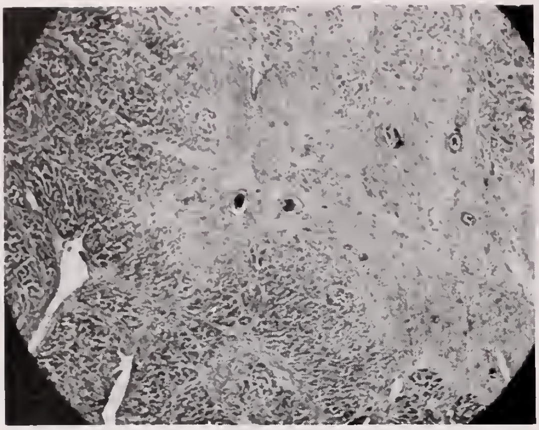

FIG. 7. Section of myocardium, showing focal areas of fibrosis with evident loss of muscle. Fibrosis appears to be of some duration.

other muscle fibers having large, more regularly shaped nuclei that showed pale staining or a vacuolated appearance. Viral inclusions were not present. The cytoplasm of the myofibers varied greatly. In some fields the cytoplasm appeared normal and cross striations were evident; in others large vacuoles and/or accumulations of pink-staining material, apparently fluid, were present within the cytoplasm, giving the muscle fibers a swollen appearance. The involvement of the papillary muscles was severe; both acute necrosis of the muscle fibers and definite abscesses were present. The walls of the intramural arteries were thickened, and there were foci of destruction of the internal elastic membrane and fibrous replacement of the media (figure 9). The endocardium was thickened focally, chiefly because of an increase in collagenous connective tissue and acid mucopolysaccharide. The valves contained more acid mucopolysaccharide than normally present. The Brown-and-Brenn, Giemsa, and Gomori methenamine-silver stains were negative.

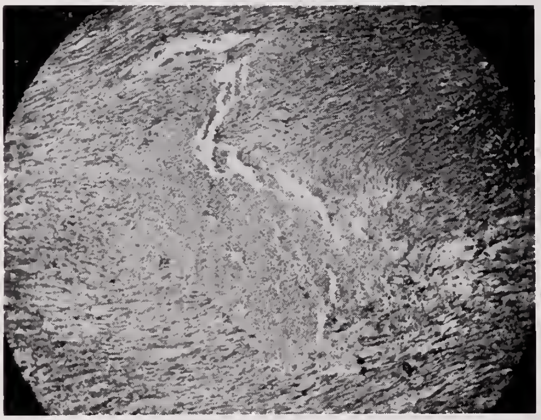

FIG. 8. Section showing small area of acute inflammation in myocardium. Loss of muscle is evident in this area.

Sections from the lungs, liver, spleen, adrenals, kidneys, pancreas, and central nervous systems were examined. The lungs were severely congested and edematous, and there was follicular hyperplasia present in the spleen. Vascular lesions were not observed in any of the other tissues or organs.

Histopathologic diagnoses. Thrombosis, acute, with aneurysmal dilatation, right coronary artery. Thrombosis, acute, with aneurysmal dilatation, left main coronary artery and circumflex branch. Arteritis, chronic and acute, right and left coronary arteries. Arteritis, chronic, secondary extramural arteries and intramural arteries. Coronary artery, accessory, arising from the pulmonary artery. Fibrosis, myocardium, diffuse, old and recent. Infarction, myocardium, focal, acute and recent. Abscesses, multiple, myocardium. Epicarditis, focal, chronic. Sclerosis, endocardium, focal, left atrium and ventricle. Hemorrhage, acute, interstitial, terminal. Cardiomegaly.

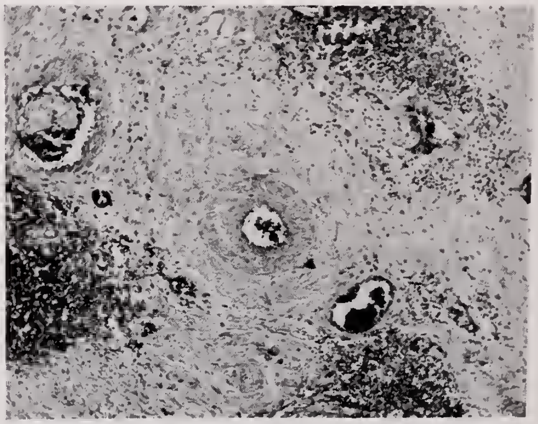

FIG. 9. Section of myocardium showing thick wall of intramural vessels along with dilated congested vascular spaces and areas of fresh hemorrhage. There is a large amount of acid mucopolysaccharide in wall of vessel.

Discussion

Coronary arterial lesions, although rare, may occur in the infant and young child. Cases occuring in the newborn period,[1-4] within the first few weeks or months of life,[5, 6, 7] and in the early years of life[8] have been reported. Lesions associated with congenital heart disease, as well as lesions believed to have originated during intrauterine life, have also been described.[9, 10, 11] Sudden unexpected death may occur as a consequence of the lesion,[12, 13] or it may occur in such a manner as to have medicolegal significance.

A variety of coronary arterial lesions have been described. In addition to anomalies of origin and number,[14-20] arterial lesions diagnosed as periarteritis nodosa,[21-26] juvenile medial sclerosis,[27-34] coronary arterial sclerosis, [32,35,36,37] necrotizing arteritis,[7,38] lesions attributed to vitamin D toxicity,[39,40,41] lesions chiefly associated with marked intimal proliferation,[42] coronary thrombosis with and without aneurysmal dilatation,[43] and coronary aneurysm with and without rupture[44] have been reported. The vascular lesions may be limited to the coronary arteries, or they may be part of a primary systemic vascular disease. On occasion they may be associated with other diseases, particularly septicemias, severe kidney disease,[45] syphilis,[46] or rheumatic heart disease.[47] Rarely they have been described in association with other apparently unrelated diseases or conditions, such as osteogenesis imperfecta[44] and dwarfism.[48] Although the vascular lesions are often the most prominent findings, usually there is cardiomegaly, and often myocardial and endocardial changes are present.

The thrombosis and aneurysmal dilatation of the major coronary arteries so dramatically portrayed in this case were probably the consequence of both the acute and the chronic disease present in the heart. The thrombosed segments of the major coronary arteries showed both acute and chronic changes. Their walls were thinned, the endothelial lining was missing focally, and there was replacement of the intima and media by fibrous connective tissue, with partial destruction of the elastica interna and leukocytic infiltration. In addition to chronic changes an acutely thrombosed vessel was present in the wall of a coronary artery. In contrast, the lesions of the secondary extramural coronary branches and the intramural arteries were of chronic nature only, lacked an inflammatory infiltrate, and were characterized by thickened walls and narrowed lumina caused chiefly by proliferation of the intima. The scarring of the intramural vessels appeared coeval with the myocardial scars.

At least 4 distinct myocardial lesions were present, again indicating both chronic and acute processes. In addition to the diffuse myocardial scarring, there were focal lesions of recent loss of myocardial fiber, acute muscle necrosis, and areas of abscess formation. The latter 3 lesions were of recent origin and were probably related to the terminal illness. A causative agent could not be demonstrated in the abscesses.

The cause of the heart lesions in this child is unknown. The microscopic study revealed diffuse vascular disease of the heart, both acute and chronic, involving the major coronary arterial branches and the intramural arteries. Chronic recent and acute changes involving the epicardium, myocardium, and endocardium were also present. The findings would indicate that, despite the negative clinical cardiac findings, heart disease had existed for some time prior to death, and the terminal event was the imposition of an acute process on an already severely damaged heart. The assumption that heart disease existed prior to the final illness is additionally supported by the cardiomegaly and dilatation found at autopsy. The role the accessory coronary artery arising from the pulmonary artery may have played is unknown and remains open for speculation. In view of the severity of the lesions of the major coronary artery, we wonder if this accessory vessel might not have served to prolong life. In view of the chronic nature of the heart disease, the significance of the clinical episodes of high fever that brought the child to the emergency room on a previous occasion is open for question; perhaps these episodes were not as innocuous as they may have seemed.

The case in question is similar to the cases reported by Munro-Faure[38] and by Martelle.[7] In Munro-Faure's case, which occurred in a 3-month-old Caucasian boy, there was generalized enlargement of the heart, which weighed 75 Gm. The great vessels arose normally, as did the coronary arteries. Both coronary arteries, however, were aneurysmally dilated and thrombosed immediately distal to their exit from the wall of the aorta, each measuring 1.5 cm. in greatest diameter. The extent of involvement of the right coronary artery was approximately the same as in the case presented. The left coronary artery was more extensively damaged, the involvement of the anterior descending branch reaching to the apex of the heart on the anterior surface, while the involvement of the circumflex branch extended to the apex on the posterior surface, where a small thrombosed branch led off from it. In addition to involvement of the coronary arteries a medium-sized artery near the pelvis of the kidney was thrombosed and undergoing fibrous repair.

In her review of the literature, Munro-Faure collected 19 cases of necrotizing arteritis in this age group, which she divided into 2 main groups: (a) those in which the coronary arteries were exclusively or predominantly affected, and (b) those in which the coronary involvement was only a facet of a generalized process. Twelve of the cases reviewed belonged to the first group, 7 to the second. Interestingly, of the 12 cases in the first group, 8 had fairly characteristic manifestations, with at least 6 of the following symptoms and signs in their clinical course: fleeting macular skin eruption (all 12 cases), fever in 7, leukocytosis in 7, conjunctivitis in 6, pharyngitis in 6, cervical adenitis in 4, and cough in 4. Less frequent clinical manifestations included rhinorrhea in 3, myringitis in 2, and periorbital edema in 2.

Martelle's case concerned sudden death in a 5-month-old male infant. Both coronary arteries in their proximal segments were aneurysmally dilated, thrombosed, and contained severe inflammation. Many of the small intramuscular branches of the coronary arteries showed inflammatory and degenerative changes but no thrombosis. Severe myocarditis and endocarditis were present, and in addition the thoracic aorta showed a thickening of the intima with an intimitis, as well as slight inflammation of the media. Although no distinct Aschoff bodies were seen, the possibility that the cardiac lesions were due to rheumatic fever was considered.

Since Munro-Faure's publication, Karius[5] has reported rupture of a congenital aneurysm of a coronary artery in a 3-week-old child; Clapp and Naeye,[10] a case of intra-uterine myocardial infarction; Gault and Usher,[4] coronary thrombosis with myocardial infarction in a newborn infant; Blailock, Robin and Lockie,[2] necrotizing arteritis in a newborn infant; and Kambolis, Lebhar and Barnett,[8] coronary thrombosis with myocardial infarction in a 4½-month-old boy. Recently MacMahon and Dickinson[42] reported a case of occlusive fibroelastosis of the coronary arteries in the newborn.

Summary

We have presented a case of sudden unexpected death in a 2-year-old boy caused by aneurysmal dilatation and thrombosis of both major coronary arteries and myocardial infarction. The cause of the cardiac disease is unknown, but it appears to have been the consequence of a previous necrotizing arteritis that damaged the walls of the major coronary arteries focally, the secondary extramural branches, and the intramural arteries, as well as focal myocardial lesions. The terminal illness appears to have been a superimposition of an acute process on the already damaged vasculature. Coronary artery lesions, though rare, may be encountered in the young age group.

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(Continued on page 422)

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Indication—Oral contraception.

Contraindications—Thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, undiagnosed abnormal genital bleeding.

Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	Mortality Rates		Hospitalization Rates (Morbidity)
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect on the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestagen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching. The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test; pregnanediol determination.

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References: 1. Inman, W. H. W., and Vessey, M. P.: Brit. Med. J. 2:193-199 (April 27) 1968. 2. Vessey, M. P., and Doll, R.: Brit. Med. J. 2:199-205 (April 27) 1968.

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President's Page

HIGH QUALITY MEDICAL CARE

The medical profession is being asked to supply "high quality medical care" to all who seek the services of a physician. Government agencies, health insurance companies, unions, and corporations seek to have provisions for "high quality medical care" written into contracts. What is "high quality medical care?" How can it be shown that services rendered are of high quality? Clear, simple definitions are not available.

Proof that high quality medical care has been given to a community or nation might be that most people are healthy and able physically and mentally to carry out their duties efficiently. Here longevity, morbidity and mortality statistics might be useful. High quality medical care requires the application of all the accumulated scientific medical information and all of the art of medical practice to every situation. Prevention of illness requires the application of all knowledge of immunization, proper diet, control of environment, and early recognition and correction of all predisposing pathological habits and conditions that lead to disease. It means prompt diagnosis of all diseased states with the efficient use of the best available treatment. For those afflicted with incurable disease, it means the use of the best methods of keeping the sick comfortable, happy, and useful as long as possible and making the end dignified and bearable for all concerned.

High quality medical care means the delivery of services in the most economical manner. It is useless to expend all present and future resources of an individual, a family, a community, or a nation in the prevention and treatment of diseases.

High quality medical care involves not only the delivery of service to those who want it but also to teach those in need of care to seek it.

To deliver high quality medical care the physician and each person assisting him must have the best basic training and must have access to and avail himself of continued education of the highest quality. All involved must be motivated at all times to use their greatest skills. The best and most advanced equipment and facilities need always to be available to meet any situation.

Measurement of the quality of medical care is necessary to maintain a high quality and as a guide for revealing areas in need of improvement. In hospitals records are available for review. Tissue committees can easily evaluate the necessity for surgical procedures already performed. Audit committees, aided by computing machines, can show whether all useful tests and examinations were done, whether the best techniques of treatment were used, and whether tests, for diagnosis and evaluation of results, were fully utilized.

Harder for committees to determine and nearly impossible for machines to record are the attitudes of physicians and health personnel. The proper usage of diagnostic and therapeutic procedures in physicians' offices and patients' homes is difficult to evaluate. Measurement of success in the relief of anxieties, induced by fear, is a major part of out-of-hospital practice and cannot easily be studied. If records in out-of-hospital cases were meticulously kept and reviewed by experts it would assist in advancing practice toward a high quality of medical care.

Evaluation of emergency care, from the time of first recognition of need, to care on the way to a facility, to delivery of care, is a special field requiring development of information and techniques of measurement. Why are people picked up alive by ambulances and delivered dead to a hospital? We do not know. Yet in terms of quality, emergency care is undoubtedly more important than cure of disease.

In summary, it is evident that everyone should have "high quality medical care," that the cost be within the means of the community or individual, and that methods of evaluating quality care be further developed and extended.

Editorials

The Armed Forces Institute of Pathology—A National Resource

Any resemblance between today's medical giant, which has its central headquarters in a blast-resistant structure at the Walter Reed Army Medical Center, and the old Army Medical Museum, created by Surgeon General William Hammond in 1862, is about as discernible as that between the acorn and the oak tree. Established during the Civil War as a repository for medico-military relics, the Museum has a 107-year history crowned with the numerous outstanding achievements of the many gifted individuals who have been attracted to its staff. History has recorded these events, some of which are known to every schoolboy, such as the accomplishments of Walter Reed, our fifth Curator, in the battle against yellow fever. Other events, exemplified by the development of typhoid vaccine by Frederick Russell, the seventh Curator, are equally well known but frequently not associated with this institution by the average physician.

During its long history the old Museum survived the labor pains associated with the birth of the precursors of what are now known as the Walter Reed Army Institute of Research and the National Library of Medicine, very worthy daughters of a very proud parent. In addition, the personnel of her early staff dabbled in everything from meteorology to architecture and motion pictures.

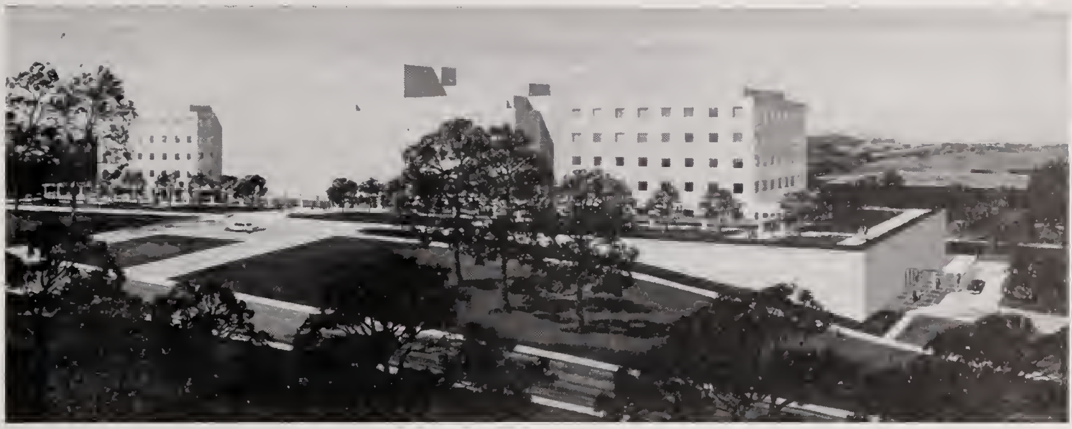
It was, however, the genius of Curator George Callender in the 1920's that pointed the way to the future. His concept of the American Registry of Pathology, which is now completing 48 years of service, was responsible for the centralization of much of the pathologic tissue in the country so that a large repository of material could be assembled that was worthy of study leading to well-founded conclusions.

In retrospect, it now becomes quite evident that the real turning point and redirection came during a 14-year period from 1941 through 1955 when, under the very able leadership of James E. Ash, Raymond O. Dart, and Elbert DeCoursey, it moulted from the monoservice museum and emerged as a triservice sophisticated professional institute well worthy of the challenge of the age of technology and well equipped to perform its mission of consultation, education, and research in pathology.

Operating as a triservice Department of Defense activity since 1949, this organization has been a prime example of how strength can be gained by judicious use of the "best" from the 3 armed services. This was effectively shown when, from 1955—armed with a new building, a powerful supporting staff, and the keen minds of a highly selected professional staff—the Navy's William Silliphant, the Air Force's Frank Townsend, and the Army's Joe Blumberg in successive directorships quickly moved the Institute into research areas not even dreamed of prior to World War II. As the tempo mounted, so did the number of research projects, educational courses, educational training aids, and consultation requests, and the inevitable need for more space.

At the present time the AFIP has metastasized over the area to 6 buildings besides the headquarters site, and including buildings at the Naval Weapons Plant, the old Bureau of Standards, and Edgewood Arsenal. We are still suffering from the bereavement caused by the destruction of our "Old Red Brick" museum building, which stood for 82 years at the corner of Seventh Street and Independence Avenue, S.W., and is now the site of construction of a new art museum. The loss of this structure is doubly painful because its architect was our fourth Curator, Dr. John Shaw Billings. Life must go on, however, and there is much to be accomplished. The staff is now looking forward to the centralization of all facilities at the Walter Reed Army Medical Center site. As can be seen in the accompanying artist's concept, new wings

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia



THE ARMED FORCES INSTITUTE OF PATHOLOGY as it will look when the additional wings are completed; an artist's concept.

will be added to the headquarters structure over the next decade. The south wing (right) is currently under construction and will contain a new museum and superimposed research tower. Construction of the north wing (left) is scheduled to begin in the early 1970's. Upon completion, the resulting structure will contain approximately 3 times the space currently in the headquarters structure alone.

Today, the AFIP is a modern, streamlined institute serving the entire Nation. The articles found in this issue of the ANNALS are but a small sample of the work being carried on, but they give some idea of the scope of the effort.

CAPTAIN BRUCE H. SMITH, MC, USN
The Director, Armed Forces Institute of Pathology

Responsibility in Optical Surgery*

ONE OF THE MOST DIFFICULT of the medical specialties is that of ophthalmology. The delicate touch and breadth of knowledge required of the eye surgeon make years of schooling and practice essential. However, with the increase in practice and knowledge comes a corresponding increase in responsibility toward the patient.

In a case cited the court stated that it is the duty of a physician to exercise reasonable and ordinary care in applying that degree of learning and skill ordinarily possessed by physicians and surgeons of good standing who are practicing in the same or a similar locality.

Of utmost importance here, where a physician undertakes service in a special branch of medicine or surgery, he must possess that degree of skill and learning possessed by other members in good standing of his specialty. The language used by the court is especially strong in the situation where a doctor does not possess the special ability required by the case upon which he is working. Here it is his duty to inform the patient of his lack of skill or knowledge, and if necessary refer the patient to a specialist.

It would seem to be the rule that a consent is not rendered ineffectual if the consentor understands the essential character of the operation to be performed. Certainly the duty of the physician is discharged if he discloses reasonable and recognized probable risks. The law will never impose on him the onus of disclosing merely possible risks. And even as to reasonable and probable risks, the duty of disclosure does not require a complete enumeration of all such risks. Nor is the physician obligated to cite the percentage ratio of failure of a particular medical procedure, even if such be known. The physician need explain to his patient the medical procedure, but not the risks thereof. It will suffice if some of the reasonable and recognized probable risks are mentioned.

There cannot be enough emphasis placed upon the standard of care required of the eye specialist. The law prevalent throughout the entire country is unanimous in holding that the degree of care

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required of the physician who specializes is far greater than that to be exercised by the general practitioner.

Thus, we can readily see that while the rewards of specialization are great, there may be a price to pay for gaining such expertise.

A Tribute to Esther Long

Mrs. Clifton C. Long, Jr., incumbent President of the Woman's Auxiliary to the American Medical Association at the time of her death, April 22, will always be remembered fondly by those of us who had the good fortune to know her. She possessed a combination of qualities rarely found in one individual. She was genuinely humble, free of affectation and superficiality, but she was also forceful and dynamic.

She seemed to be a typical, small-town physician's wife—a "plain Jane" from Main Street, Ozark, Arkansas, as I once remarked to Mrs. Jane Alder, staff editor of *M.D.'s Wife.* The response to my comment astounded me: "She seems so and she plays it to the hilt! But she's a tremendous organizer."

Esther Long met every Auxilian with first-name informality. She made it clear that her name was Esther and she knew and called you by your first name.

On her way to France in the early spring she made a brief stop in Washington, where she was a luncheon guest at the French Embassy. We sent Esther a corsage of yellow roses to wear for this special occasion. A "thank you" note came to us from Paris, and her last words to us were: "See you in April!" You see, she had planned to visit us for our April meeting.

On March 29 she returned from her trip to France and a few days later was guest speaker at the convention of the Woman's Auxiliary to the Student American Medical Association in Chicago.

Despite her illness and without complaint she carried out her official duties with remarkable determination until only a few weeks before she died. A day before her death, from her hospital bed, she calmly made plans for the orderly transition of her presidential responsibilities to her successor, Mrs. John M. Chenault.

Mrs. Chenault said of her: "Esther Long was a true leader. Her warm personality, her down-to-earth sense of humor and her love of people made it a pleasure to work with her. She was a tremendous organizer, yet so genuinely humble I doubt she realized how skilled she really was. We loved her and we will miss her."

On hearing of Mrs. Long's death AMA President Dwight L. Wilbur commented: "Mrs. Long typifies the finest qualities of the physician's wife, serving her husband and his profession."

Mrs. Esther Callahan Long was a native of Topeka, Kansas, and met Dr. Long while she was a student at the University of Kansas. Dr. Long is a surgeon and Chief of Staff at Turner Memorial Hospital in Ozark. Besides her husband she is survived by 4 children, a son and 3 daughters.

The Woman's Auxiliary to the AMA is encouraging Auxiliaries and individuals to make memorial gifts in the name of Mrs. Long to the AMA Education and Research Foundation.

Polly (Mrs. Alfred J.) Suraci
President, Woman's Auxiliary
to the D.C. Medical Society

HEALTH DEPARTMENT NOTES

Prenatal Care

An intensive drive to increase utilization of prenatal health services offered by the D. C. Department of Public Health has brought increasing numbers of pregnant women to the clinics for early health supervision.

In 1964 there were 19,001 live resident births in the District of Columbia and 5,154 women were admitted to the prenatal care program. In 1967, 15,569 infants were born to District residents and new patients registered for prenatal care totaled 7,896. While official figures for the year 1968 are not yet available, we do know that the number of live resident births has again decreased and that consumer utilization of prenatal health services has increased.

We have been encouraging pregnant women to seek early health supervision in order to find and treat conditions which may lead to a difficult pregnancy.

Experience in Health Department clinics over the years has shown that most women register in prenatal health clinics during the second trimester of pregnancy.

Public health nurses, health educators and aides, medical and paramedical personnel are making a continuing and concentrated effort to

Drug Dependence—Methamphetamine

Methamphetamine (known as speed or crystal) is a stimulant closely related to amphetamine and ephedrine. It is taken orally, as tablets or in an elixir, or intravenously and produces extreme restlessness and irritability; violence and paranoid reaction are possible. Effects resemble those produced by amphetamine but are more marked and the toxicity is greater. Sometimes the outcome is fatal.

convince women of the value of registration for health supervision as soon as pregnancy is suspected.

Registration or intake procedures for prenatal health care are carried on in a number of Health Department facilities. Procedures in the initial visit follow a pattern. Laboratory tests are completed. A medical history is compiled and a physical examination is made by a physician. The medical history includes details of previous pregnancies and deliveries, any attendant complications, and the weight and condition of each child at birth. The patient's childhood diseases and injuries are noted as well as illnesses such as tuberculosis or diabetes which relatives may have had.

After the examination and medical history are completed the patient sees a nutritionist who explains the importance of a balanced diet and a social worker who may counsel her on nonmedical problems which could adversely affect the pregnancy.

An expectant mother who is diabetic, has an RH blood factor, anticipates a cesarean section, has had numerous pregnancies, or is very young or in late child-bearing years may be referred to the Complications Clinic at D. C. General Hospital. Intensive diagnostic procedures are carried out and the patient may be retained there on an outpatient basis or returned to the referring facility for continued prenatal health care. Diabetics and patients indicated for cesarean delivery automatically return to the Complications Clinic during the last 6-week period for selection of a medically advisable date for induced delivery.

During 1967 approximately 2,500 babies were born to unwed teenagers. Some of these girls were accepted into the Webster School Program, a facility which offers an opportunity to continue schooling during and after pregnancy. Those taking part in the Webster School Program continue under health supervision and also receive social work counseling.

Unwed pregnant girls, 16 years of age or under, who have not been admitted to the Webster School Program meet in weekly group sessions at Gales Clinic Building, 65 Massachusetts Avenue, N. W., for health care. A social worker offers assistance on nonmedical problems. Most of the girls who attend Gales Clinic sessions attend night school courses planned especially for them at a neighborhood school. Each girl sees the same doctor regularly.

Maternity patients at the Health Department clinics may choose to have their babies at D. C. General Hospital or at one of several contract hospitals in the District. Patients able to pay hospital costs for delivery of their babies are billed for this service.

Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

HEW Evaluates "Ray-Alert" as a Radiation Measuring Device

Mr. Charles C. Johnson, Jr., Administrator of the Consumer Protection and Environmental Health Service, Public Health Service, Department of Health, Education, and Welfare, advises owners of color TV receivers that purchase of a radiation measuring device with the trade name, "Ray-Alert," would not insure a complete X-ray safety evaluation of their sets.

While the device is capable of detecting X-ray emissions from the picture tube, if used as the distributor suggests, it will not, when so used, measure X-rays which may be coming through the sides and rear from such components as high-voltage shunt regulators and high-voltage rectifier tubes, which components are more likely than picture tubes to be X-ray sources. Picture tubes were found to be emitting X-radiation above the 0.5 milliroentgens-per-hour recommended maximum in only about 1 per cent of the 1,124 sets tested in a Washington survey in January, 1968.

The "Ray-Alert," developed by the Advanced Research Corporation, 5100 Wisconsin Avenue, N.W., Washington, D.C., was tested by the Bureau of Radiological Health. In a news release, May 14, Mr. Johnson stated:

"The 'Ray-Alert' is scientifically sound as a device for measuring exposure which may result from X-radiation from the front of a television receiver picture tube, but a single device of such small size cannot be used in making the complete survey which must be made of each surface of a TV set before it can be determined whether that receiver is emitting X-rays above the recommended maximum. Under these circumstances, we advise color television set owners against relying totally on 'Ray-Alert' in seeking to establish the absence of X-ray emissions from a particular television receiver."

Mr. Johnson's advice is to have color sets serviced only by competent personnel, and to have viewers sit no closer than 6 to 10 feet away from the front of the receiver and similarly to avoid exposure to the sides and rear of the set when it is operating.

DOCPAC BRIEFS

or

Take Part or Be Taken Apart*

Dr. Werner von Braun testified before the Astronautics and Space Sciences subcommittee in April 1968 and compared the differences between Great Britain and Japan since World War II. He pointed out that when Great Britain got rid of Churchill and shifted its priorities from industrial research and development programs to social programs, the net result has been, in the words of Dr. von Braun, "That the entire economy has lost so much steam it cannot produce a tax intake now even to finance the social programs."

On the other hand, Japan, with social problems just as pressing, solved them by concentrating on jobs through industrial and economic development. They started with transistor radios and now are coming up with sophisticated products that, according to Dr. von Braun, "have almost cornered the world market." Last year more than 61 per cent of the radios sold in the United States came from overseas. As you know, medical instruments are coming from Japan and other foreign countries in larger and larger quantities.

Dr. von Braun points out that shifting our priorities to immediate concerns may ignore potential development, which could have far-reaching beneficial effects. He says comparing the space satellite for communications with the manned space program is like comparing an automobile with a baby. The auto is good for something right now—the baby represents a liability for many years but presents much more potential than the auto, which will be on the scrap heap in just a few years.

So we in the Congress face a very complex series of factors in trying to determine national priorities. In the end, however, Congress will be responsive to your expressed actions. Right now Congress is responding to the actions of a very vocal group of citizens. Congress and the administration are also responding to the apathy and indifference that plague many Americans who fail to express themselves, content to leave politics to the politicians.

I know the pressures of the job that make you feel like you just can't take the time to be bothered with public affairs. It's quite natural for you to think that you can't take an active part in the political events that surround you, but let me say this: If you don't take part in politics, then the politicians will take you apart.

(*Continued on page 422*)

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* Excerpts from "Politics Without Doctors Is Bad Medicine" by Senator Paul Fannin, of Arizona, and reprinted by permission from the Journal of the Georgia Medical Association, October 1968.

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CORRESPONDENCE

WASHINGTON, D.C., May 7, 1969

MR. GILBERT HAHN, JR.
CHAIRMAN, CITY COUNCIL
GOVERNMENT OF THE DISTRICT OF COLUMBIA
WASHINGTON, D.C.

DEAR MR. HAHN:

On behalf of the Medical Society of the District of Columbia I wish to enlist your aid and assistance in preventing the proposed transfer of St. Elizabeths Hospital from the jurisdiction of the National Institute of Mental Health to the Department of Public Health of the District of Columbia.

St. Elizabeths Hospital, established in 1852, has grown in stature as a psychiatric hospital principally through its operation as a Federal institution. It is now an internationally famous teaching and training facility which benefits not only this country and its citizens but people everywhere.

The National Institute of Mental Health has the ability and prestige to continue to attract from every nation leading teachers and students who are needed to maintain St. Elizabeths as the prestigious institution it now is. The Public Health Department of the District of Columbia, with its multitude of health problems and social concerns, is not in a position to attract the same quality personnel. It is our fear, and, we believe, a justifiable one, that under the jurisdiction of the City St. Elizabeths will quickly become a static, overcrowded, second-rate state institution. Adequate facilities and eminent personnel for teaching and research will disappear and this country will lose one of its best hospitals for the treatment of the mentally ill.

The members of the Medical Society are greatly concerned and would appreciate anything you may do to stop the transfer of control of St. Elizabeths Hospital from the National Institute of Mental Health to the Public Health Department of the District of Columbia.

FRANK S. BACON, M.D.
President, The Medical Society
of the District of Columbia

WASHINGTON, D.C., May 13, 1969

TO PRESIDENT BACON:

I have your letter about St. Elizabeths Hospital.

I do not think the City Council will, at this time, play any great role in the transfer or not of that institution. However, I am very glad to have your letter with your views as they are very important to me.

GILBERT HAHN, JR.
Chairman, City Council, Government
of the District of Columbia

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Emergency Medical Service—District of Columbia '69*

In the daily drama of emergency medical care physicians are both actors and critics. As actors they should play their parts with skill and compassion and give the audience the best possible performance. Responsible physicians have a second job, however, that of knowledgeable critics. They must not consider just their own role but all aspects of the disaster performance. The set, the plot, the other actors, the direction, the action, the ending, must all be the subject of an honest critical judgment.

Why should doctors take on this role of self-appointed critics of the emergency establishment? Unfortunately, no one else seems interested in the assignment.

As critics of local emergency performances we are not without guiding standards. In the last few years national attention has been directed to the problems of emergency medical services by the National Academy of Sciences,[1] the American Medical Association,[2] and the American College of Surgeons.[3] These organizations have developed an abundance of outlines, guides, standards, and check lists. Emergency medical services thus fall into the growing category of "gap" diseases, where knowledge of a theoretical nature far exceeds local ability and will to apply it. This report examines our local efforts as judged by these national standards.

It is customary to divide the problem of Emergency Medical Services into 4 areas: Planning and Review, Communications, Ambulance Services, and Hospital Emergency Departments. These classifications are arbitrary, of course, and some aspects of the emergency picture, notably manpower resources, do not lend themselves to this pigeonhole treatment. Nevertheless, this report has followed the national classification, not because of its aptness or logic but rather to facilitate comparisons with accepted performance standards.

Planning and Review

The goal of all emergency planning is to provide a framework for optimal resolution of emergency situations. The harmonious and efficient collaboration of all components of the emergency response system results only when all involved groups and organizations participate in preliminary study, mutual discussion, self-criticism, and agree beforehand on lines of communication and authority.

In Washington a large number of organizations, public and private, concern themselves with portions of the Emergency Response System. They communicate with each other on what could euphemistically be called an informal basis, compete with each other for power, funds, and publicity, and accept or assign responsibility unilaterally. The need for a central coördinating body is obvious and has been stated forcefully by the National Academy of Sciences,[1] by the AMA Council on Emergency Medical Services,[2] and by local conferences.[4] Most hopefully, this concept has been given the sanctity of law by the Highway Safety Act of 1966, which provides Federal matching funds to aid in the formation and operation of such a coördinating committee.

THE ADVISORY TASK FORCE ON EMERGENCY MEDICAL SERVICES

A grant for the formation of such a committee has been secured by the D.C. Department of Public Health; administrative workers have made preliminary plans, and the approval of the Mayor and City Council is being sought. The Department of Health has conferred with the D.C. Medical Society during the planning stages, and the Medical Society will be a member of the committee when it is activated as the Advisory Task Force on Emergency Medical Services. There will be an Executive Secretary, 5 citizens appointed by the Mayor, and representatives of the Department of Public Health, the Fire Department, the Police Department, the D.C. Medical Society, the D.C. Highway Safety Coördinator, the City Council, the Board of Police and Fire Surgeons, the Committee on Trauma of the American College of Surgeons, the Ambulance Association of the District of Columbia, the American Red Cross, the Health Facilities Planning Council, the Medico-Chirurgical Society of D.C., the Hospital Council of the National Capital Area, and the D.C. Corporate Counsel. The Medical Society should certainly encourage and support this new group. A crucial and as yet unanswered question is what the relationship between the Task Force and its Executive Director will be. In the health field we already have too many councils whose advice is not taken and which meet at the whim of the sponsoring body (witness the history of the Emergency Ambulance Advisory Committee described below).

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* Prepared by the Committee on Emergency Medical Service of the Medical Society of the District of Columbia: Harry Zehner, Jr., M.D., Chairman; William R. Strong, M.D., Vice Chairman; Drs. Francis W. Blackwell, Kang Ok Cho, Charles F. Colao, Joseph T. English, Edward G. Fisher, William W. Funderburk, Elisabeth K. Kalandros, Edwin C. Mitchell, Richard A. Nicklas, Jerome Lewis Sandler and Don S. Wenger.

PLANS FOR MAJOR DISASTER

Plans for the management of major disasters are well conceived. District of Columbia law designates the Director of Public Health as the central controlling and coördinating authority. The plans made by the Department of Public Health for response within its own Department are excellent, and in recent times of strife the Department was able to mobilize itself to meet new and remarkable challenges.[5] It is fair to add, however, that the interface between the Department and the other components of the medical and emergency response system is not as well defined, and that the Department has preferred (or been forced) to solve problems by mobilizing internal resources rather than by coöperating under previous agreements with other organizations. Recognizing this, the Department has recently completed an agreement with the American Red Cross, defining the roles of both organizations in time of disaster. More such agreements, with other organizations, including the Medical Society, would be most useful.

Communications

Since all components of the emergency response system must be coördinated it follows that an adequate communications system is the *sine qua non*. At the present time there are 7 major types of communications capabilities with some degree of usefulness.

Dial telephone: Although it is the most used and the most useful of our communication devices, emergency planning cannot depend on dial telephone for several reasons. Phones do not exist at emergency sites, they are jammed at switchboards during times of real crises, and the emergency itself may damage the phone lines.

Direct line phone: The problem of switchboard tie-up is avoided and there is less vulnerability to physical damage to phone lines with a direct line system. If direct lines carry a significant portion of daily traffic their cost as emergency measures also becomes negligible. For instance, the Medical Bureau now operates direct lines between Doctors Hospital, Providence Hospital, and other hospitals. Since calls over these lines come from internal switchboards no charge other than a monthly rate is made, and the hospitals involved save a corresponding amount in toll charges over their outside lines. If all hospital systems had the same easily remembered number to connect with the Medical Bureau, most of the traffic now on outside lines could be carried on inside lines. An additional direct line between the Medical Command Post of the Department of Public Health and the Civil Defense Command Post in the Municipal Center would place in a single system all physicians, hospitals, and Public Health officials.

Citizens' band radio: The Medical Society is currently equipped with citizen band radio equipment. The advantages of the system are several: The equipment is inexpensive, it is in wide use, and it is manned by 8,000 enthusiastic amateurs. The C.B. Radio Clubs of the area are most anxious to participate in all disaster exercises. At times of real crises, however, their mobilization must of necessity be slower than that of the professional Government agencies which are "on the air" full-time, and the problem of traffic control becomes difficult. C.B. radio operators, therefore, are a useful secondary medium for emergency communications, but their availability should not in any way affect decisions to place primary reliance on more expensive, professionally manned equipment.

Amateur radio: Amateur radio is a separate and distinct system from citizen band radio, but it shares similar advantages and disadvantages.

Fire Department Emergency Ambulance Radio: This system is now in daily 24-hour use. A central dispatching system can communicate with the 10 ambulance stations and with the ambulances themselves should they be on the road or at the scene. A phone patch arrangement at the dispatching area allows an ambulance to communicate directly with a hospital emergency room should the need arise. This feature of the system is of great utility and has features of great drama, but nevertheless it is infrequently used. Most ambulances arrive at the emergency room announced only by the wail of their sirens. The dispatching system of the ambulance service provides us, because of its central location, with the largest bulk of emergency statistics currently available.

Health Department Command Post Radio 154.040: This is an emergency system which allows communication between Health Department offices, the D.C. General Hospital, Glenn Dale Hospital, and mobile units of the Health Department. The ability to communicate with the Health Department's mobile trailers was of great usefulness at the time of Resurrection City, the Inauguration, and General Eisenhower's funeral, when it became necessary to provide emergency treatment facilities on short notice. The major failing of the Health Department system is that at present there is no interconnection between the Department and the hospital and medical community.

Medical Emergency frequency 155.340: This frequency is provided by the Federal Communications Commission for general medical use. Some physicians in the area are now equipped to communicate with their offices on this frequency, and there is no objection by the Government to hospitals using this channel. In times of emergency this is an undisciplined (public) network and it is likely to become crowded with trivial messages, and hence is unlikely to be of real use at the time it is most needed.

Hospital frequency 155.160: Many years ago a few far-sighted individuals recognized the need for emergency interhospital communications. Their efforts to find such a system were frustrated by a fight for an assigned frequency, squabbles over who should pay the cost, uncertainty over equipment specifications, and the reluctance of individual hospitals to be the ones to take the first step. Fortunately for our city, there has been preliminary resolution of these early difficulties, and a small consortium of hospitals (Washington Hospial Center, Cafritz, Freedmen's, Providence, Washington Sanitarium, and Columbia) has taken the initial steps to establish an Emergency Hospital Radio Network. Now that the basic decisions have been made it would behoove other hospitals, the Medical Society, and the Health Department to join the network as soon as possible.

Washington is now possessed of many professionally manned, 24-hour emergency communication systems, and one significant new system has now advanced beyond the planning stage. The problem for us in the future is the interlacing and coördination of these splendid component parts.

Ambulance Services

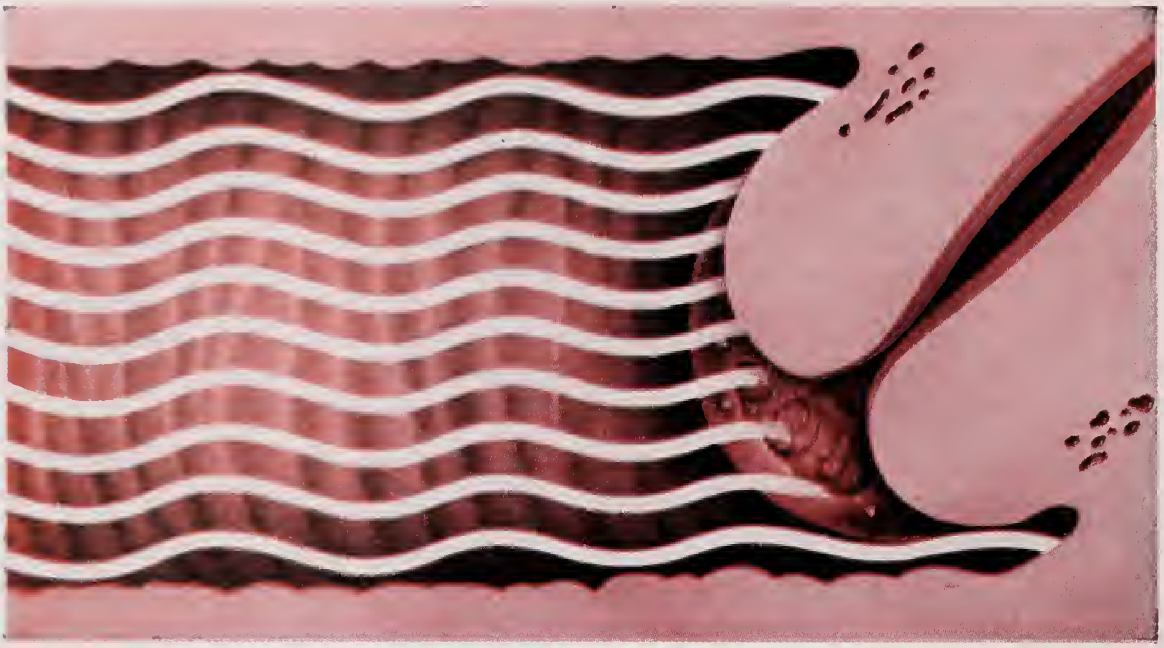
The goal of ideal ambulance service is not just to bring the patient to the hospital but also to bring medical expertise to the patient. To this end a variety of national organizations have interested themselves in standards for ambulance service. The Committee on Trauma of the American College of Surgeons, the National Academy of Sciences, the Public Health Service, and the American Medical Association have recently published national performance standards for ambulance service. A review of these documents convinces one that there is an accelerating trend toward vehicles more ideally adapted to care of the sick and injured and to greater professional competence by ambulance attendants.

THE EMERGENCY AMBULANCE SERVICE ADVISORY COMMITTEE

After an extensive review of ambulance practices by a private consulting firm, the D.C. Commissioners, with Organization Order 118 of August 27, 1957, established the Emergency Ambulance Service under the primary direction of the Fire Department. Organization Order 119, of the same date, established the Emergency Ambulance Service Advisory Committee, consisting of members of the Fire Department, Police, Coroner, Director of Public Health, and the Board of Police and Fire Surgeons. At later dates the Public Health Advisory Council, Freedmen's Hospital, Washington Hospital Center, D. C. Medical Society, the Medico-Chirurgical Society of D.C., Children's Hospital, Providence Hospital, Hadley Memorial Hospital, George Washington University Hospital, and Georgetown University Hospital were given representation on the Committee.

The charge given the Committee was remarkably broad and forward-looking:

> The functions of the Emergency Ambulance Service Advisory Committee shall be as follows:
>
> A. To study and make recommendations to the Board of Commissioners and to the Fire Chief on any matters which the Fire Chief or the Commissioners may refer to the Committee, or on matters of the Committee's own choosing, concerning the Emergency Ambulance Service. Any member of the Committee may, on behalf of the organization which he represents, request the Committee Chairman to include on the Committee agenda such matters concerning the Emergency Ambulance Service as his organization may desire to have brought to the attention of the Committee.
>
> B. To review and make recommendations to the Fire Chief regarding changes in the present "operating Instructions for Emergency Ambulances" proposed by the Fire Chief or by members of the Committee.
>
> C. To develop plans and recommendations regarding the future needs of the District of Columbia for emergency ambulance service. Such planning activities may include but not be limited to planning for:



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1. Development, as needed, of additional hospital and other District emergency service and facilities not now a part of the Emergency Ambulance Service.
2. Coördination and use of hospitals, Emergency Ambulance and other emergency facilities, both governmental and nongovernmental, throughout the Washington Metropolitan Area.
3. Coördination of the Emergency Ambulance Service with the facilities of the various Federal hospitals in the Washington Metropolitan Area.
4. Consideration of inspection, regulation and use by the District Government of private ambulances used in ambulance service.

D. To survey the experience of other cities and their metropolitan areas in regard to emergency medical and ambulance service and to study and develop recommendations for possible improvements in the Emergency Ambulance Service suggested from the experience of these other cities.

In all candor it must be stated that in the last few years the Committee has met infrequently. No annual reports have been filed and the Committee has consulted with the Fire Chief only on minor procedural changes in ambulance service. The noble mission plotted out in the Commissioners' Order has been ignored.

Categories of Ambulance Service

Fire Department Emergency Ambulance Service: This service is the backbone of emergency care. Approximately 80 firemen, with at least 2 years of regular Fire Department service, are transferred to the Emergency Ambulance Service for periods of a year or more. All firemen hold an advance First Aid Certificate from the American Red Cross and receive an additional week's training before going on duty. It would be less than honest to report that the Emergency Ambulance Service is preferred duty by the men of our Fire Department. Although all personnel assigned to Emergency Ambulance Service do receive a slight increase in pay while members of the unit, there is no opportunity for advancement in the Emergency Ambulance Service, and all promotions must come within other portions of the Fire Department.

There is a conscientious program of training and retraining in first aid within the Fire Department. The course of study is based on the American Red Cross advanced program with additional material related to cardiopulmonary resuscitation and childbirth. Several hours of the training are given by volunteer physicians. Since all ambulances are stationed at Fire Houses where attendants are regarded as "ship's company" and must participate in regular station chores and drills, the opportunities for advanced training are not great although periodic visits and checks are made by the Captain of the Emergency Ambulance Service.

The "Red Cab" problem: Drivers of the Fire Department ambulances estimate that 75 per cent of their calls are not for emergency services but rather for transportation of the indigent, a service they have sardonically called "The Red Cab."

An ambulance driver was recently quoted on Station WWDC:

> "They don't know what's really wrong with them, so first thing they do, they scream 'Give me an ambulance,' instead of trying to figure out something themselves, and a lot of times when you get on the scene, you have to work it out for them. They don't have enough sense to really realize what's going on. If they are sick, they figure they should deserve an ambulance. They don't figure that 'well, I'm sick I can go to a doctor or I can go to a hospital' or something like this on my own . . . they figure immediately an ambulance should provide the transportation for them, and a lot of times they have an appointment for a clinic . . . a clinic visit . . . they figure why pay a cab . . . go for nothing."[6]

Health Department ambulances: These ambulances fulfill the duty of transporting the indigent to and from clinics of the Health Department and participating hospitals. Since these patients are chronically ill the problem is one of transport rather than treatment. Operators of Health Department ambulances do have rudimentary first-aid training.

Private ambulance services: At least 10 private ambulance services are operative in the District of Columbia. There are no legal requirements placed on operators of private ambulances other than possession of a valid chauffeur's permit. In contrast, Virginia requires all ambulance attendants to be possessors of advanced First Aid Certificates.

Volunteer ambulances: Several volunteer ambulance groups, most notably Bethesda-Chevy Chase Rescue Squad, frequently operate within the borders of the District. Their standard of training and enthusiasm for their work are said to be excellent, but, like similar ambulance services, they are not subject to official review or regulation.

Is this situation satisfactory? Unfortunately, we have no way of knowing at present. Until someone can be persuaded to review the overall situation in an unbiased manner, collecting statistics and evaluating cases in a systematic manner, we shall not know and shall not have the information necessary for improving our present system.

It is paradoxical that physicians spend hours in hospital death conferences each week, debating the care rendered to the aged and hopelessly ill, while, weekly, young patients who were alive when they boarded an ambulance are delivered dead on arrival, and no responsible body investigates, catalogs, or analyzes these cases with a view to making any improvement in the care of the accident victim.

The mechanism for such a review has been given us in the Commissioners' Order of 1957, but this bright sword has grown rusty in its scabbard.

Hospital Emergency Departments

All hospitals are required by D.C. law to have emergency departments, but since the law fails to define an adequate department it is of little use or importance in raising standards of emergency medical care. The Committee on Trauma of the American College of Surgeons has prepared a model of a hospital emergency department[3] which is valuable in bringing out details of operation, but in many cases its standards (so often quoted) are frankly permissive. For instance, these "standards" state that every patient should be seen within 15 minutes after the patient's arrival. The best standard for a hospital emergency department is a variation on the Golden Rule: "How and where would the physician like to be treated in case of an emergency?"

With the Golden Rule standard as a guide, emergency departments in the District of Columbia run the gamut from mediocrity to high respectability. No emergency department is content with its present status. All have plans for improvement of facilities, equipment, or staff. The single most effective improvement in the quality of emergency-room care would be the stimulation of hospital staffs to study the quality of their own emergency care with the same passion and precision that are now expended on inpatient care.

Records and statistics of emergency-room treatments are at present inadequate. They are sketchy, incomplete, and fail to represent accurately the care given the patient. Although emergency-room forms differ widely from hospital to hospital, emergency records share a common fate; they are stored in the basement, unconsulted and unreviewed until the statute of limitations runs out.

WALK-IN MEDICAL CENTERS

More and more Americans regard emergency rooms as a community walk-in medical center, and a significant portion of visits to hospital emergency rooms represent the change of dubious theory to accomplished fact. Recently a popular local magazine which advises its readers on shopping, restaurants, and the theatre, published an article, "Which Emergency Room Should You Go To?"[7] as if all patients have the precious option of choice. The poor, particularly, use emergency rooms in place of a primary physician, working a hardship on themselves and on emergency departments. Area hospitals have responded to this challenge with a variety of strategies. The first method is to turn the walk-in patient out again. This "solution" ignores the basic problem, amounts to no community service, and rebounds to the detriment of both hospital and patient. A second solution, adopted by most hospitals in a desultory manner, is to accept these walk-ins as part of the emergency load, but to relegate them to second-priority status. Although the moral obligation to render treatment is met, the bad feeling generated is frequently as bad as if the patient had been turned away at the start. Hospitals with a large outpatient department use the emergency department as a funnel to guide the walk-in to the appropriate clinic. The most advanced solution, now employed at Children's Hospital, is the establishment of a drop-in clinic with evening hours. Both patients and administrators have found it to be a most acceptable solution. In effect, the hospital has assumed the role of general practitioner with an office open all hours—first come, first served.

WHO SHOULD PAY?

Financing emergency medical care is the most perplexing problem of all. At present all hospitals that practice quality emergency care do so at considerable financial loss. Many hospitals in the area have not shirked their responsibility, but the Boards of Trustees of other hospitals whose income comes through patient billing are of the opinion that their already burdened inpatients cannot be asked to subsidize a large emergency room in addition to their own rising hospital costs.

Those hospitals with contracts for hospital care with the Department of Health face further daily losses if indigent patients are not speedily transferred to city hospitals after emergency care. The present rate prescribed by law for such cases is far below the actual cost to the hospital; and many administrators are frankly suspicious that the City drags its feet on the transfer of patients to D.C. General.

At some time in the near future society must come to the conclusion that uniform emergency medical service can only be supplied at round-the-clock, tax-supported emergency rooms. The current practice of asking the sick and injured to bear the cost of their emergency care is as unsound as asking the robbed and murdered to bear the cost of the police department or the owner of the burning house to pay for fire engines. If an emergency medical service of uniform quality is to be our goal, then hospitals must be assured tax-supported compensation for their efforts.

Recommendations

1. The Medical Society should actively support the formation of the Advisory Task Force on Emergency Medical Service.

2. The Medical Society should support the efforts of the Hospital Council and the Health Facilities Planning Council to develop a functional interhospital radio network. The Medical Bureau should be one component of the system.

3. The Medical Society's representative on the Emergency Ambulance Advisory Committee should exert all possible moral and administrative influence to revive the Committee's interest in completing the charge of the 1957 Board of Commissioners. The Ambulance Service and its Advisory Committee must be in a position to review its own work on a regular basis so that it can continue to grow and improve.

4. All area hospitals should revise their organizational structure to insure that emergency rooms are subject to the same rigorous scrutiny that characterizes the other phases of hospital operations.

5. The entire emergency system of the District of Columbia should have unified tax support, with hospitals reimbursed fully for emergency medical services.

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NEW MEMBERS

Active

Hugh T. Carmichael, M.D. Office: 1700 18th Street, N.W. Born in Peterborough, Ontario. Medical degree: Queen's University, Kingston, Ontario, 1923. Specialty: Psychiatry.

Patrick Alan Gorman, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Belfast, Ireland. Medical degree: Queen's University, Belfast, Ireland, 1954. Specialty: Internal Medicine.

Masud Homayouni, M.D. Office: 1310 Southern Avenue, S.E. Born in Iran. Medical degree: George Washington University, 1958. Specialty: Pathology.

Tecla O. Lovina, M.D. Office: 1222 Monroe Street, N.E. Born in the Philippines. Medical degree: University of the Philippines, Manila, 1957. Specialty: General Practice.

Hansueli Steiner, M.D. Office: 1616 18th Street, N.W. Born in Lucerne, Swtz. Medical degree: University of Basel Medical School, Basel, Swtz., 1962. Specialty: Psychiatry.

Josephine L. Weissman Warshaw, M.D. Office: 2925 Nichols Avenue, S.E. Born in New York, N.Y. Medical degree: Chicago Medical School, 1963. Specialty: Obstetrics and Gynecology.

Associate

Thomas F. Flaherty, M.D. Office: 5015 Lee Highway, Arlington, Va. Born in Cleveland, Ohio. Medical degree: Georgetown University, 1963. Specialty: Obstetrics and Gynecology.

Yeong-Cheol Koh, M.D. Office: Glenn Dale Hospital, Glenn Dale, Md. Born in Korea. Medical degree: National University, Seoul, Korea, 1949. Specialty: Thoracic and General Surgery.

Panos Koutrouvelis, M.D. Office: Seven Corners Professional Building, Falls Church, Va. Born in Greece. Medical degree: National University of Athens, Athens, Greece, 1956. Specialty: Radiology.

Gursewa Singh Pabla, M.D. Office: 6056 Central Avenue, Seat Pleasant, Md. Born in Naura, Punjab. Medical degree: University of Santo Tomas, Manila, the Philippines, 1959. Specialty: General Practice.

Resident-Intern

Richard Huberman, M.D. Office: George Washington University. Born in New York, N. Y. Medical degree: Chicago Medical School, 1963. Specialty: Ophthalmology.

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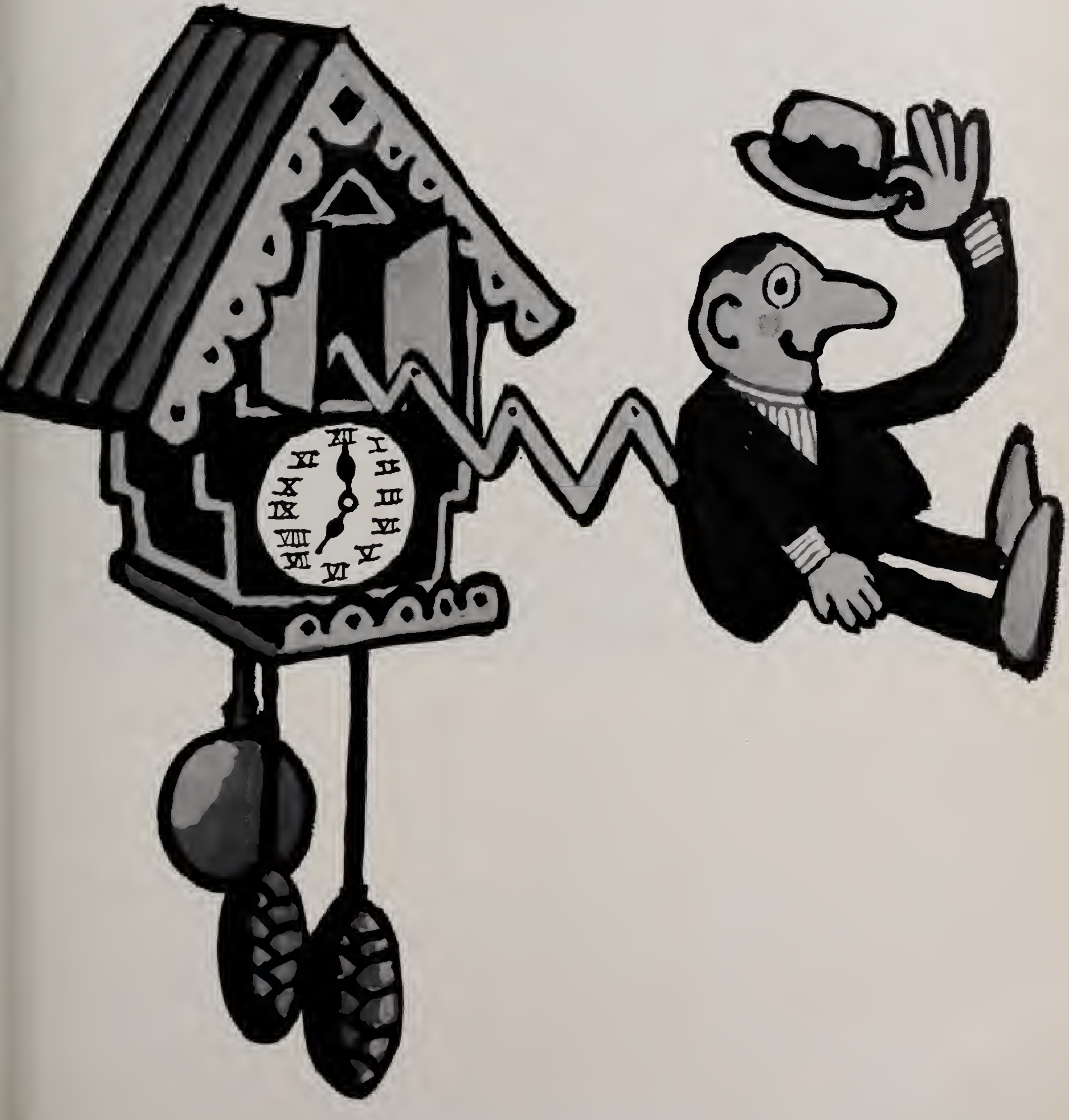

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Clues to PVD

The geriatric smoker

In studies on peripheral vascular disease—a common by-product of the degenerative aging process—considerable attention has focused on the important role of smoking in the progression of the disease. Although it may not be etiologic, smoking is widely recognized as a prominent contributing factor.[1]

Skin blood flow—significant factor in PVD. Cutaneous digital vasoconstriction caused by nicotine has been observed both in normal subjects and in patients with peripheral vascular disorders.[1,2] Among patients with peripheral vascular disease, however, age and the severity of the disease appear to modify the effects of nicotine. For example, in a study of older patients with *marked* peripheral vascular disease,[3] changes induced by smoking were not statistically significant for the group as a whole. This was explained on the basis of decreased skin reactivity. *Smoking is not permissible in any stage of the disease,* since even "... minimal reduction in blood flow in patients with ischemic limbs may produce a further reduction in tissue nutrition, and thu may be another case of the proverbial straw on th camel's back."[3]

In another study of patients with peripheral vascula disease,[4] the investigators stress that decreased skin bloo flow during smoking "... is the factor of most importanc to the patient with peripheral vascular disease." *Whi such patients may adjust to the discomfort of vascular i sufficiency in skeletal muscle, decreased skin blood flow ma often lead to severe symptomatology.*

More and more physicians have adopted the practic of investigating for peripheral vascular disorder whe confronted with a geriatric patient who is a habitua smoker. Once a diagnosis is established, therapeuti measures are directed toward increasing the periphera circulation and appropriate management of the patient' general medical needs. These include the importan safeguards of keeping warm and refraining from smoking

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osage: 1 or 2 Timespan Tablets morning and night.
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eferences: (1) Roth, G. M.; Shick, R. M., and Secrest, R. R., in James, G., and Rosenthal, T., s.: *Tobacco and Health*, Springfield, Ill., Charles C Thomas, 1962, pp. 311-322. (2) Entmacher, P. S.: oc. Med. Sect. Amer. Life Convention 51:149, 1963. (3) Freund, J., and Ward, C.: Ann. New York Acad. i. 90:85, 1960. (4) Coffman, J. D., and Javett, S. L.: Circulation 28:932, 1963.

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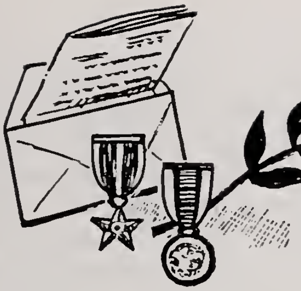


News & Personals

Summary of Executive Board Actions

Proceedings of May 26 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting, which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Thomas M. Arnett, Robert J. Coffey, Henry D. Ecker, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. The meeting was called to order by Dr. Wilner at 7:15 p.m.

The minutes of the April 28 meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

April	30	Committee on Constitution and By-laws
May	1	Physician Placement Committee
	2	Committee on Blood Banks
	7	Fee Review Committee
	9	Committee on Emergency Medical Service
	13	Committee on Blood Banks
	13	Board of Credentials
	13	RMP Policy and Steering Committee
	14	Interdisciplinary Committee on Drug Dependency
	15	Committee on Air Pollution
	16	Committee on Relative Value Study
	19	Committee on Medical Aspects of Sports
	20	Committee on Child Welfare
	21	Committee on Constitution and By-laws
	22	Traffic Committee
	23	Medical Bureau Committee

Board of Credentials: On recommendation of the Board of Credentials, 6 applicants were elected to Active membership, 4 to Associate membership, and 1 to Resident-Intern membership. Their names appear on page 407. Approval was given to the following changes in membership status:

Transfers

Active to Life: Aaron Nimetz
Active to Associate: William S. Cole and Nikolas A. Janovski
Active to Special: Frederick C. Heath

Resignations

Active: Lewis Pennington Scott and Charles E. Woodson
Associate: Robert E. Byrne

Dr. Robert E. duPrey was reinstated to Associate membership.

Utilization Committees: Dr. Bacon presented a written statement to the Board, reading as follows: "Hospital Utilization Committees dealing with the occupancy of beds seem to be working satisfactorily. Utilization of physicians' services and overutilization of laboratory, X-ray and other treatment facilities in hospitals and doctors' offices need consideration. I should like to pose a question. Would it be useful and practical to suggest to the Health Department, which operates Medicaid, to the Medical Service of D.C., which operates an insurance program, and to Medicare and Champus to submit reports to the Society when the services of physicians and the use of laboratory and X-ray equipment appear to be greater than necessary to take care of the individual patient's problem? If the answer is yes, then we need the Utilization Committee to investigate and maybe adjudicate individual cases."

Considerable discussion followed his statement and it was agreed that Dr. Bacon should set up some kind of apparatus to implement his recommendation for presentation at the next Board meeting.

Committee on Emergency Medical Service: Dr. Harry Zehner, Jr., joined the Board meeting at this point to present his report and the recommendations of the Emergency Medical Service Committee (see pages 401–407 in this issue). The military must be involved, he said, for full implementation of emergency medical service. After discussion a motion was made and carried that Dr. Zehner be requested to draw up a letter to Mayor Walter Washington relative to the establishment of an Emergency Medical Services Council for the District of Columbia, outlining specifics, and that he present the letter to Dr. Bacon for approval prior to mailing.

Committee on Liaison with the Clergy: By mail ballot the Executive Board approved the recommendation of the Committee to change its name to Committee on Medicine and Religion.

Committee on Environmental Health: A motion was made and carried to request the newspapers to publish the Smog Index for the District of Columbia once a week, if not daily, providing there is no financial involvement of the Society.

Membership Committee: This Committee recommended that all new members be required to attend one of 4 special social functions during their probationary year. After some discussion a motion was made and carried that all new members be invited to attend a special social function during their probationary year.

Report on Regional Medical Program: The progress report on RMP activities, as submitted by Dr. Arthur E. Wentz, was accepted.

Other Business

1. For information Dr. Bacon read Mr. G. Hahn's reply to Dr. Bacon's letter protesting transfer of St. Elizabeths Hospital to the D.C. Public Health Department. (See June ANNALS, page 346 and Correspondence in this issue, page 398.)

2. Dr. Camalier spoke briefly on plans for projects of AMA-ERF. In response to his request that he and Dr. Hughes, delegates to the AMA, be given Board guidance, the Board instructed them to vote in opposition to any expansion of the Institute for Biological Medical Research and to voice opposition to the AMA's being conduit to the tobacco industry, should these matters arise at the meetings of the House of Delegates during the AMA Convention in New York City.

3. It was voted to accept the recommendation of the Committee on Constitution and By-laws that the admission of osteopaths to the Society be referred to the Membership Committee for further study and that the Membership Committee draw up guidelines by which the Board of Credentials can determine who is a qualified osteopath.

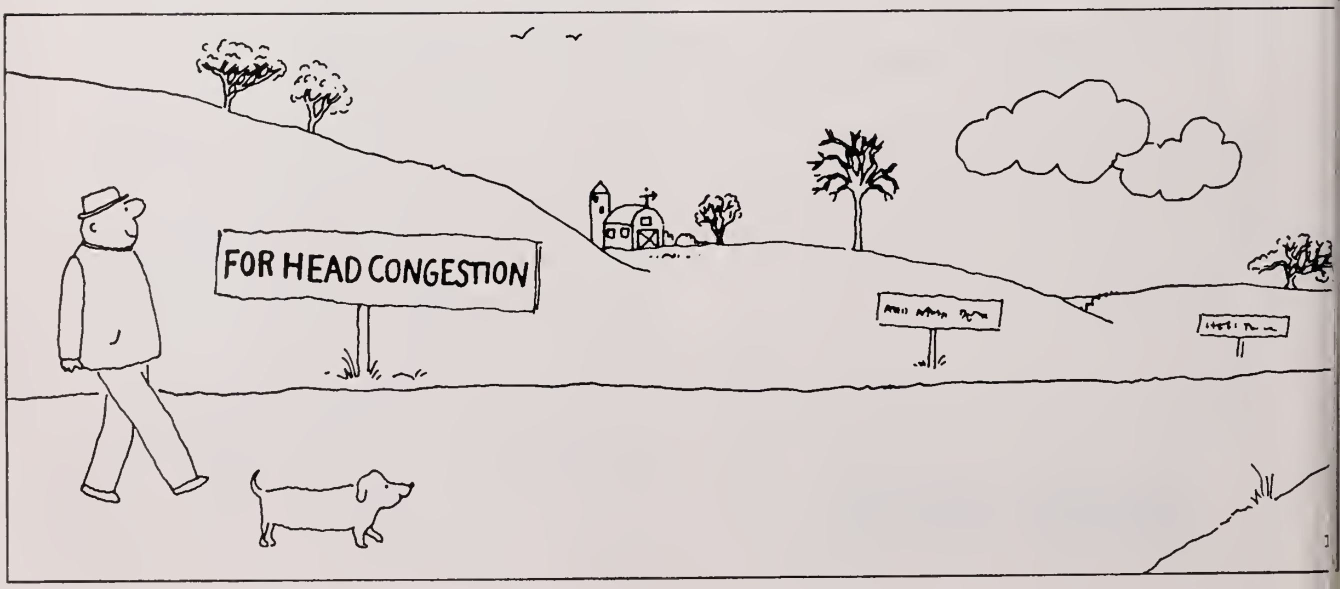
4. A motion was made and carried to accept the recommendation of the Constitution and By-laws Committee that our membership classifications not be changed to coincide with those of the AMA because there are no major differences.

5. It was voted to repeal Chapter X of the By-laws so as to delete any reference to the Council on Specialty Sections.

There being no further business, the meeting was adjourned at 10:30 p.m.

MEETINGS

The American College of Physicians will sponsor a 3-day **Postgraduate Course on Clinical Gerontology,** August 21–23, at the Shoreham Hotel, Washington. This course will immediately



precede the **Eighth International Congress of Gerontology**, to be held, August 24–28, at the Sheraton-Park and Shoreham Hotels in Washington, and 1 day, August 29, in Baltimore, Md.

The ACP course is held in coöperation with the University of California at Los Angeles. It is designed to give internists more clinically usable knowledge in gerontology. Specific areas to be covered include the pathology of aging, gland and blood changes with age, the aging cardiovascular and respiratory systems, nutrition and psychological changes. The management of psychiatric problems of the aged, including senility, and community resources for the aged will also be studied.

Dr. Ralph Goldman, Los Angeles, Professor of Medicine (Geriatrics) at the University of California, is Director of the course. Co-director is Dr. Reubin Andres, Baltimore, Associate Professor of Medicine at Johns Hopkins University and Assistant Chief of the Gerontology Research Center of the National Institute of Child Health and Human Development.

Registration fee for ACP members is $60.00 and for non-members, $100.00. Requests for information and application blanks should be made to Dr. Edward C. Rosenow, Jr., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pennsylvania 19104.

The International Association of Gerontology sponsors international congresses every 3 years in either the United States or abroad.

The first plenary session of the 1969 Congress will focus on the biological, psychological, and social theories of aging; the second plenary session will deal with various health problems of an aging population. On the last day (August 29) those attending the Congress may travel to Baltimore to visit the Gerontology Research Center of the National Institute of Child Health and Human Development and other points of interest in Baltimore relating to the study of aging.

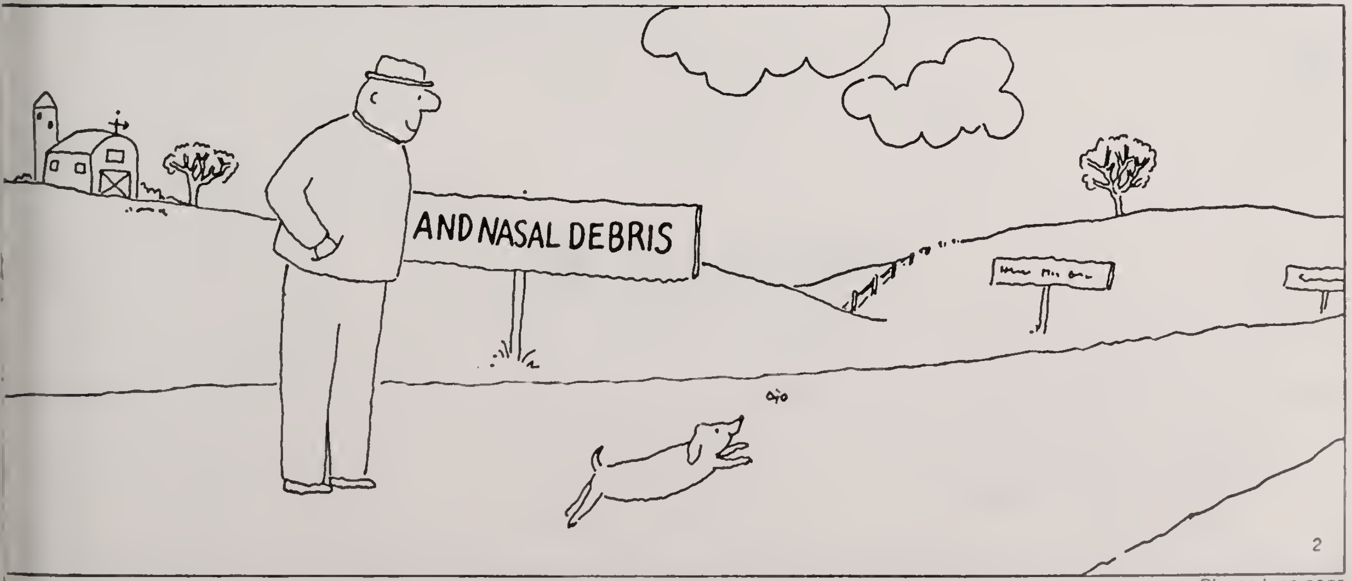
Gerontologists and others working in allied fields may become active members of the Congress by payment of the registration fee of $40.00. Members of the families of active members, who are not themselves scientists, may register for $20.00 as affiliate members which entitles them to participate in the social events of the Congress.

Further information may be obtained by writing to the Secretariat, Eighth International Congress of Gerontology, 9650 Rockville Pike, Bethesda, Md., 20014; telephone (301) 530-3200.

The Eleventh Annual Meeting of the Society of Military Orthopedic Surgeons will be held at the National Naval Medical Center in Bethesda, Md., September 22–24. For further information telephone Captain R. H. Brown, MC, USN, 295-0103.

GENERAL NEWS

The Morris Cafritz Memorial Hospital School of Medical Technology will open in September, 1969. Dr. Masud Homayouni, Chief of Pathology at the Hospital, states that the new School has been accredited by the Council on Medical Education of the American Medical Association. Twelve students will be accepted in September.



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Applications for admission are now being accepted. To qualify a student must have a minimum of 3 years in college with a background in chemistry, the biological sciences, and mathematics. Qualified students will receive a stipend of $125.00 per month for the duration of the 52-week course. There is no tuition. Upon completion they become eligible to take the National Examination conducted by the Board of Registry of Medical Technology.

Applications should be sent to the Hospital at 1310 Southern Avenue, S.E., Washington, D. C. 20032.

Under a reorganization of the **Washington Office of the American Medical Association, Mr. Harry R. Hinton** was named **Deputy Director of the Public Affairs Division—Washington.** He will also be Manager of the Washington Office.

Dr. Carruth J. Wagner, formerly Assistant Surgeon General of the Public Health Service, was named **Special Assistant to the Executive Vice President for Medical Affairs—Washington,** a new, part-time advisory post. He will be directly responsible to Dr. Ernest B. Howard, Executive Vice President of the AMA.

Mr. James W. Foristel was promoted to **Director of the Department of Congressional Relations** in the Public Affairs Division. **Mr. Darrell Coover** continues as **Director of the Department of Governmental Relations** and **Mr. Paul R. M. Donelan** continues as the **Division's legislative attorney** in Washington. There also is in the Washington Office a Communications Services Department which is part of the AMA Communications Division.

Georgetown University School of Medicine announces that its **Fourth Postgraduate Seminar Cruise** will be to the Mediterranean. The Italian Line's *S.S. Raffaello* will depart from New York on October 12, 1969, returning on November 2. There will be calls at 7 ports and an overland trip to Rome. Further information may be obtained from the official transportation agent for the Cruise, Allen Travel Service, 565 Fifth Avenue, New York, N. Y. 10017.

The June *Newsletter* of the **American College of Surgeons** states that despite an early "sell out" of shipboard space for its **1970 Scientific Winter Cruise,** subsequent cancellations have made reservations again available.

Itinerary for the cruise, scheduled for January 7–27, 1970, will cover the Caribbean area, with Sectional Meetings to be held in San Juan, Caracas, and Panama City. Two Moore-McCormack Lines luxury liners, the *S.S. Argentina* and her sister ship, the *S.S. Brasil,* will be used.

Fellows interested in participating should write to the College's travel agent, Thomas McGuire Enterprises, Inc., 230 North Michigan Avenue, Chicago, Ill. 60610, for application forms and complete information.

At the **Annual Medical Staff Dinner of the Washington Hospital Center,** May 9, at the Hotel Statler-Hilton, **Dr. Samuel M. Dodek** was **awarded the Gold-headed Cane** with the accompanying citation: "Dr. Dodek is among our honored Senior Advisory Staff Members. He has well fulfilled those qualities of dedication to the 'Oath of Hippocrates, the Prayer of Maimonides,

and the Golden Rule' in his relations with patients and colleagues, beginning at Garfield Memorial Hospital in 1935 and continuing on the Active Staff of the Washington Hospital Center through 1967." Dr. Dodek is Clinical Professor of Obstetrics and Gynecology, George Washington University School of Medicine, and Chariman of the Obstetrical Board of the District of Columbia.

This year's **winners of the Harry H. Kerr Essay Awards** were announced at the staff dinner:

Frist prize, $100, to Dr. Hamid Sahebjami, second-year Resident in Internal Medicine.

Second, $75, to Dr. William McNamara, second-year Resident in Surgery.

Third, $50, to Dr. Pablo Denes, Intern.

Fourth, $25, to Dr. Antoine H. Khoury, first-year Resident in Ophthalmology.

The District of Columbia Division of the American Cancer Society held its annual meeting in the D.C. Medical Society's Exhibit Hall, May 22. Highlight of the meeting was the presentation to Mr. Frank H. Weitzel, former Assistant Comptroller General of the United States, of the St. George Medal and Citation for his services to the Society and for his contribution of time and skill over the past 16 years to cancer control. Mr. James L. Harrison, President of the Society, presided at the meeting and made the presentation.

Following the meeting the Society's Board of Trustees met to elect officers. Mr. Harrison, Public Printer of the United States, was reëlected President of the Society.

Among those elected Vice President by the Trustees were Dr. S. Joseph Cosimano, Jr., and Dr. LaSalle D. Leffall, Jr. Mr. Frank G. Jost was elected Treasurer and Miss Hilda Wexler, Secretary.

Members of the Medical Society named to the Executive Committee were Drs. Robert S. Jason, C. Roger Kurtz, Lois I. Platt, Cyril A. Schulman, and James G. Sites. Dr. Kurtz, Past President of the Division, was elected professional Delegate to the Society's National Office.

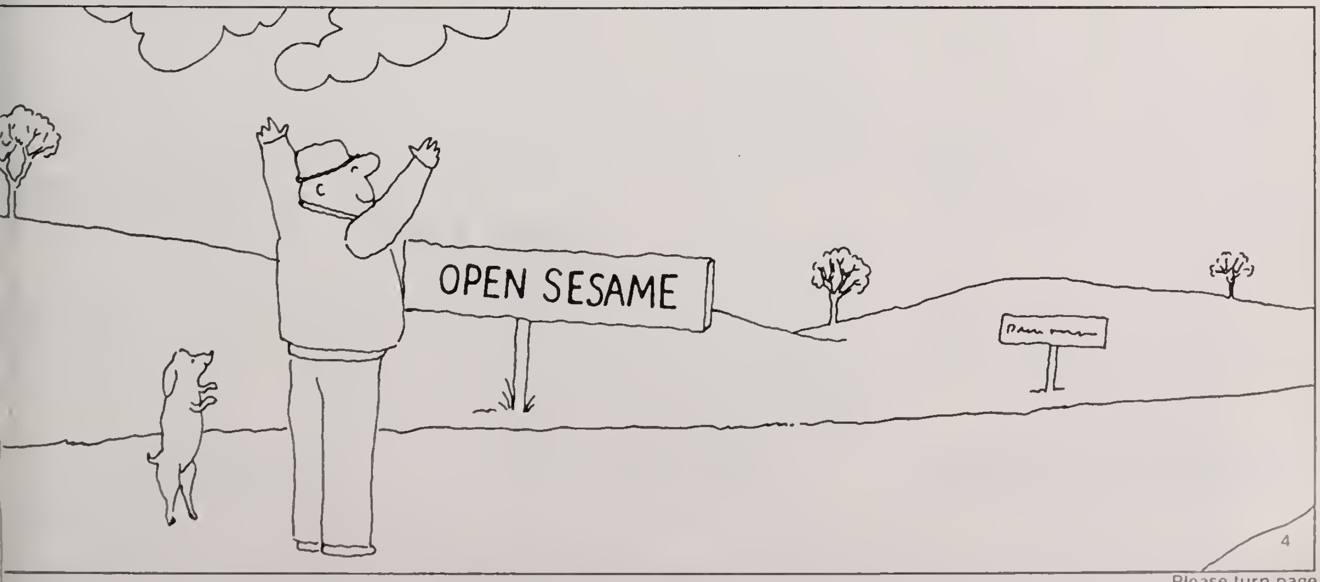
At the joint annual meeting of the **D.C. Tuberculosis and Respiratory Disease Association and the D.C. Thoracic Society** at the National Press Club, May 12, Dr. Harold M. Silver was elected President of the Thoracic Society and Vice President of the Tuberculosis and Respiratory Disease Association. Dr. Silver is Associate Clinical Professor of Medicine at George Washington University.

Other officers elected to the Thoracic Society were:

Dr. Roscoe C. Young, Jr., *President-elect*; Dr. Robert W. Langevin, *Vice President*; and Dr. P. Gregg Rhodes, *Secretary-Treasurer*.

Elected members-at-large were Dr. Maurice A. Sislen, Dr. Barrington B. Barnes, Dr. Robert F. Donohoe, and Colonel Alan R. Hopeman, MC, USA. Dr. Moe Weiss was elected representative Councilor to the American Thoracic Society.

At the Annual Banquet of the **George Washington University Medical Alumni Association** awards were presented to Mrs. Agnes E. Meyer, Dr. Oscar Sugar, and, posthumously, to



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Dr. William E. Brainin. The dinner was held at the Shoreham Hotel, May 23.

Mrs. Meyer, philanthropist and widow of Eugene Meyer, who founded *The Washington Post*, received the Alumni Service Award in recognition of her distinguished service and outstanding contributions to the medical activities of the University. Dr. Sugar, Professor of Neurological Surgery at the University of Illinois College of Medicine, received the Alumni Achievement Award.

Dr. Brainin, who was President of the Medical Alumni Association at the time of his death last December, was presented, posthumously, the Alumni Service Award in recognition of his efforts as Association President and officer and as Chairman of his Class of 1934.

Dr. Jack Kleh, Acting President of the Association, has been succeeded as President by Dr. Maurice T. Gromet, of Brooklyn, N.Y.

Officers of the **Washington Medical and Surgical Society**, who assumed their new duties, July 1, are:

Dr. Edward C. Wilson, Jr., *President*; Dr. Peter N. Horvath, *Vice President*; Dr. Calvin T. Klopp, *Secretary*; and Dr. Peter P. Andrews, *Treasurer*.

Georgetown University has been awarded a $25,000 **grant from the Charles E. Merrill Trust** to help finance its new Child Development Center for mentally retarded children. Included in the Center, scheduled for completion in August, will be diagnostic apparatus, research laboratories, speech and hearing correction rooms, and space for rehabilitation facilities. Primary emphasis will be on training medical and paramedical personnel who, in turn, will work with the mentally retarded in their communities.

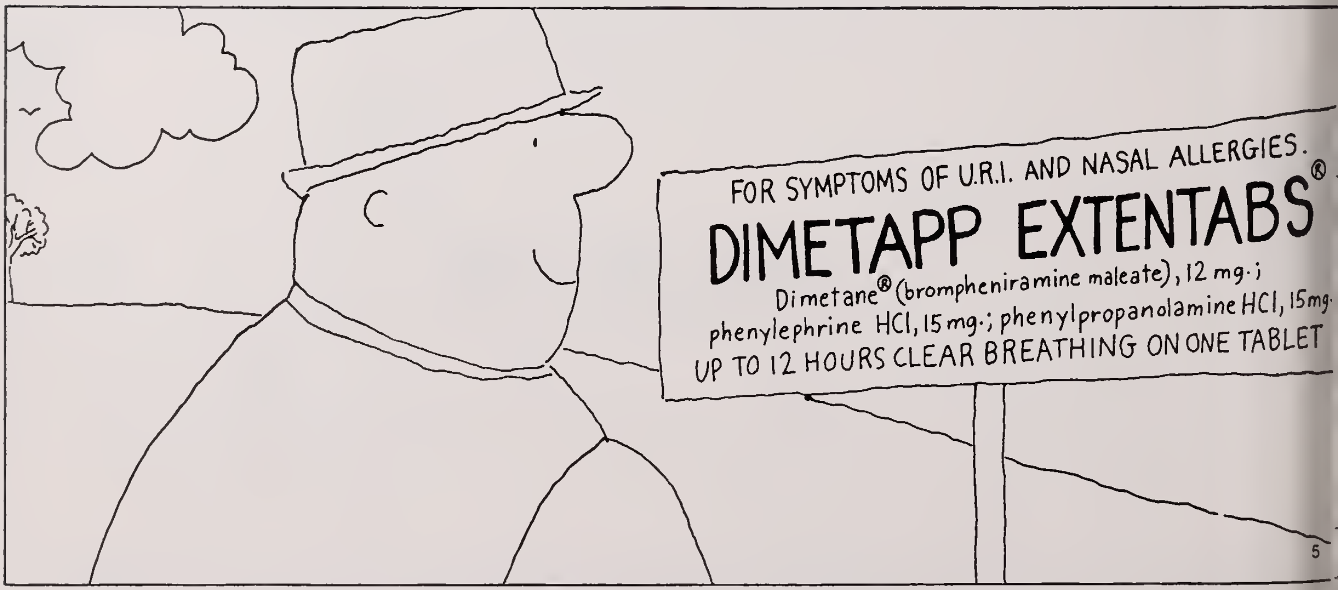
PERSONALS

Dr. Robert J. Coffey, Professor of Surgery and Chairman of the Department of Surgery at Georgetown University School of Medicine from 1947 to 1968, was presented the John Carroll Medal of Merit "for dedication and devotion" at the 170th commencement exercises at the University on Sunday, June 8.

Dr. Coffey, a medical alumnus of Georgetown, received his Master of Science in medicine and his Ph.D. in surgery from the University of Minnesota. He became Chairman of Georgetown's Department of Surgery in 1947, having joined the faculty in 1938. He is Past President of the D.C. Medical Society and the Southern Surgical Association and has served on the Board of Governors of the American College of Surgeons. He is presently a member of the Executive Board of the D.C. Medical Society.

Dr. John Parks, Dean of the George Washington University Medical Center, has been elected a Fellow of the British Royal College of Obstetrics and Gynecologists and is in London this month to attend the admission ceremonies.

Dr. Crawford S. Brown, dermatologist, with offices in Bethesda, Md., was cited by the Washington Medical and Surgical Society at its annual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dinner, May 14, at the Bethesda Country Club. Dr. Alfred J. Suraci, President of the Society, presided at the dinner and presented the Frank E. Gibson award to Dr. Brown "in recognition of meritorious contributions to medical science." Dr. Brown is an Associate member of the D. C. Medical Society.

Dr. B. Edwin Erikson, an Associate member of the D. C. Medical Society, was awarded the Distinguished Service Scroll at the 65th Annual Session of the American Association of Orthodontists, held at Miami Beach, Fla., April 27 to May 1. The Scroll, created by the Board of Directors of the Association in 1963, is presented to those who, in the judgment of the Scroll Committee, have made "substantial scientific, technical, and nonscientific contributions to orthodontics in addition to other valuable and devoted services to the Association and to its membership."

Dr. Henry D. Ecker was elected Governor-elect for the District of Columbia by the Board of Regents of the American College of Physicians at its April meeting in Chicago. He will take office as Governor in April 1970.

Dr. Dorothy B. Holmes, Washington ophthalmologist, who participated in the Volunteer Physicians for Viet Nam program during the period of January to March 1969 has received a citation and plaque in recognition of her services from the parent organization, the American Medical Association.

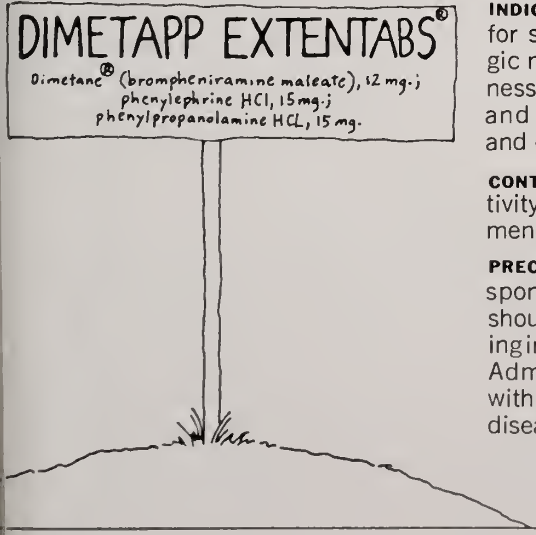
Dr. Charles P. Waite, of Madison, Nebr., staff psychiatrist at the Norfolk (Nebr.) State Hospital, was elevated to Fellowship in the American Psychiatric Association at the recent annual meeting of the Association in Florida, May 5–9. Dr. Waite has just finished terms of office as Vice President and President of the District Chapter of the APA which includes the states of Nebraska and South Dakota and is now on the Executive Council of that organization. He is an Associate member of the D.C. Medical Society.

Five physicians were among those honored by the George Washington University General Alumni Association at the 1969 Awards Dinner, May 17, at the Mayflower Hotel.

Dr. Jerome Epstein, Assistant Clinical Professor of Medicine and former President of the Medical Alumni Association, received the Alumni Service Award for his service to the University through leadership in alumni activities.

Faculty awards for 25 years' service went to **Drs. James J. Feffer, Leon Gerber, Caroline Jackon, and George D. Weickhardt.**

Dr. Feffer is Professor of Medicine and Associate Dean of Clinical Affairs of the Medical Center and Chief of Staff of the University Hospital and Clinic. Dr. Gerber, Clinical Instructor in Surgery, and Dr. Weickhardt, Assistant Clinical Professor of Neurology, are medical alumni of George Washington University. Dr. Jackson, Assistant Clinical Professor of Obstetrics and Gynecology, was the first woman to be admitted to the medical staff of Garfield Hospital and the first woman to be elected to the Washington Gynecological Society.



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Research Support Applications Invited by Heart Association

Research investigators may now apply to the American Heart Association for support of studies to be conducted during the fiscal year beginning July 1, 1970.

Established Investigatorships: Five-year awards to scientists of proven ability who have developed their careers to the point where they are able to conduct independent research. Stipends begin at $13,000 with fringe benefits and $1,000 yearly increments. An additional $1,000 is given annually as a departmental grant to the investigator's department head. Deadline for submitting applications is September 15, 1969.

British-American Research Fellowships: One-year training awards to U.S. citizens, usually with 2 years of postdoctoral research experience at time of application, to work in a qualified institution in Great Britain. Stipend, $7,500 plus dependency and travel allowances; departmental grant, $750. Deadline for submitting applications is September 15, 1969.

Visiting Scientists: Awarded for 3 to 12-month periods, enabling American investigators to invite experienced foreign scientists to the U. S. for research collaboration. Stipend negotiable per comparable positions at host institution, and travel allowance. Application must be initiated by U. S. host scientist. Although the primary deadline is September 15, additional applications will be received until December 31, 1969, subject to the availability of funds.

Application forms for investigatorships, fellowships, and grants may be obtained from the Research Department, American Heart Association, 44 East 23rd Street, New York, N. Y. 10010.

OBITUARIES

William Travis Gibb, Jr., M.D.

(1902–1969)

Dr. William T. Gibb, Jr., gastroenterologist, who had practiced in the Washington area for more than 20 years, died, May 10, 1969 at Suburban Hospital where he was formerly Chief of the Medical Department.

Dr. Gibb, the son of a physician, was born in New York City, May 9, 1902. He attended the Horace Mann School in New York and received his undergraduate degree from Columbia College. He graduated in medicine from Cornell University, New York City, in 1927 and for the following 2 years he interned at St. Luke's Hospital in New York.

Dr. Gibb was in private practice in New York City and continued on the attending staff of St. Luke's Hospital until 1942. He was also on the staff of Knickerbocker Hospital from 1929 to 1942.

During World War II, from 1942 to 1946, he served in the Medical Corps of the United States Navy with the rank of Commander. Following the War he came to Washington to open his private practice, which he limited to internal medicine with the subspecialty, gastroenterology. His offices were at 1514 21st Street, N.W.

Dr. Gibb was on the faculty of George Washington University School of Medicine from 1946 to 1960 as Assistant Clinical Professor of Medicine. Before his long illness he was Chief of Medicine at Suburban Hospital, Senior Attending at George Washington Hospital, and on the attending staff of the Washington Hospital Center. He was consultant in gastroenterology to the National Naval Medical Center and to the National Institutes of Health.

He was elected to Active membership in the Medical Society of the District of Columbia in 1946. He was a diplomate of the American Board of Internal Medicine, a member of the American Medical Association, a Fellow of the American College of Physicians, and an associate member of the Montgomery County (Md.) Medical Society. He was Past President of the Washington Civitan Club and belonged to the National Press Club, the Society of Colonial Wars, and the Kenwood Golf and Country Club. He contributed many papers to the scientific literature, mostly in the field of gastroenterology.

Dr. Gibb lived at 9700 Bexhill Drive, Kensington, Md. He leaves his wife, Mrs. Margaret Kies Gibb; 2 sons, Dr. S. Peter Gibb, of Weston, Mass., and William T. Gibb III, of 9911 Hillridge Drive, Kensington, Md.; and a daughter, Mrs. Elizabeth Cox, of Sussex, England. A sister, Mrs. Francis Neely, of Mifflintown, Pa., also survives him.

Joel Norton Novick, M.D.

(1902–1969)

Dr. Joel N. Novick, otolaryngologist, associated with the Washington Hospital Center since it opened in 1958, died, June 2, 1969 at the Center after a long illness. His home was at 4201 Cathedral Avenue, N.W.

Dr. Novick was born in Okno, Russia, August 22, 1902. With his family he came to the United States when he was 9 years of age. He completed rabbinical studies at Yeshiva Theological Seminary in Brooklyn, but developed an interest in science and enrolled in the City College of New York, from which he received a B.S. degree in 1924. He was awarded a Master's degree in chemistry from Johns Hopkins University in 1925 and his medical degree from George Washington University in 1929. He interned the following year at Unity Hospital, Brooklyn, N. Y.

After a short period in private practice he began training in his selected field of interest, serving a residency in otolaryngology at the Graduate Hospital of the University of Pennsylvania from 1934 to 1936.

Returning to Washington in 1936 he joined the staff of the old Episcopal Eye, Ear and Throat Hospital and became Chief of Otolaryngology; he continued to head that Department at the Washington Hospital Center when Episcopal merged into the Center. In 1962 he was named an Emeritus Staff member of the Center. He also served on the staffs of Doctors, Children's, and old Garfield Memorial Hospitals.

Dr. Novick was Clinical Instructor in Otolaryngology at George Washington University School of Medicine from 1936 to 1952. From 1962 until his death he was Clinical Associate Professor and Chairman of the Division of Otolaryngology at Howard University.

During World War II he served as a member of the Induction Board at Fort Myer, Va.

Dr. Novick was elected to Active membership in the Medical Society of the District of Columbia in 1937. He was a diplomate of the American Board of Otolaryngology and a member of the American Medical Association, the American Academy of Ophthalmology and Otolaryngology, and the Jacobi Medical Society, which he served as Treasurer from 1939 to 1945. He authored a number of articles in his field of interest.

His wife, Mrs. Minerva Greenberg Novick, survives him together with 2 sons, Matthew N. Novick, of Rockville, Md., and David A. Novick, of Freeport, Grand Bahama Island, and a daughter, Mrs. Sandra Deckelbaum, of Charlotte, N.C. He also leaves a sister, Mrs. Betty Levy, of New York City.

Richmond Shepard Paine, M.D.

(1920–1969)

Dr. Richmond S. Paine, Chief Neurologist at Children's Hospital of the District of Columbia, died suddenly, May 16, 1969, in his home at 1416 33rd Street, N.W.

Dr. Paine, a Washingtonian, was born, August 3, 1920. He received his A.B. degree from Swarthmore College in 1941 and his medical degree from Harvard University in 1944. After interning for a year at Children's Hospital, Boston, he served 4 years in the Medical Corps of the U.S. Army, 1945–1949.

Following his military service Dr. Paine continued his specialty training with a year each as resident in pediatrics and resident in neurology at Children's Medical Center, Boston. He later spent a year in London doing postgraduate work in neurology at the National Hospital for Nervous Diseases. From 1954 to 1962, with the exception of the year abroad, he was Associate in Pediatrics at Harvard Medical School and Associate Neurologist at the Children's Hospital Center.

Dr. Paine came to Washington in 1962 to accept the post of Professor of Pediatric Neurology at George Washington University School of Medicine and to affiliate with Children's Hospital as Senior Attending Neurologist. Dr. Paine was well known for research and publications in the field of cerebral palsy and learning disorders in children. As a consultant to the National Institutes of Health, he developed techniques for the neurological examination of newborn babies, which were widely distributed throughout the world in a series of films. He lectured throughout the United States and abroad and served as consultant to many national and governmental organizations.

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Board to the United Cerebral Palsy of Washington and a member of the Board of Directors, Rehabilitation Council, Health and Welfare Council of the National Capital Area.

Dr. Paine was elected to Active membership in the Medical Society of the District of Columbia in 1963. Board-certified in pediatrics, he was a member of the American Academy of Pediatrics, the American Academy of Neurology, the American Academy for Cerebral Palsy, the New England Pediatric Society, and the American Society of Human Genetics.

Surviving him are his wife, Mrs. Valerie Paine, and 4 children, Howard, Emily, Martha and Diana Paine. His mother, Mrs. Howard S. Paine, also survives him.

Guilford Emmanuel Naranjit, M.D.

(1924–1969)

Dr. Guilford E. Naranjit, general practitioner in Washington since 1953, died suddenly, May 17, 1969, at his home, 1758 Sycamore Street, N.W. His offices were at 1130 Maryland Avenue, N.E.

Dr. Naranjit, the son of a Presbyterian minister, was born in Trinidad, British West Indies, November 24, 1924. He attended Naparima College in Trinidad and Cambridge University in England. Coming to the United States in 1945, he enrolled at Howard University, where he received his Bachelor of Science degree in 1948 and his medical degree from the College of Medicine in 1952.

After completing his internship at Freedmen's Hospital he was staff physician at Crownsville State Hospital in Maryland until he began his private practice.

Dr. Naranjit was elected to Associate membership in the Medical Society of the District of Columbia in 1954 and to Active membership in 1967. He was a member of the Association of Former Interns and Residents of Freedmen's Hospital.

He is survived by his wife, Mrs. Mary Naranjit, and 3 children, Savitri, Indra and Guilford, of the home address; 3 brothers, Sam R. and Simeon Naranjit, of Trinidad, and Wilfred Naranjit, of Hamilton, Ontario; and 2 sisters, Mrs. Victoria Narine and Miss Ivy Naranjit, both of Trinidad.

Death of Child from Coronary Thrombosis—Burns and Manion

(*Continued from page 386*)

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DOCPAC Briefs

(*Continued from page 397*)

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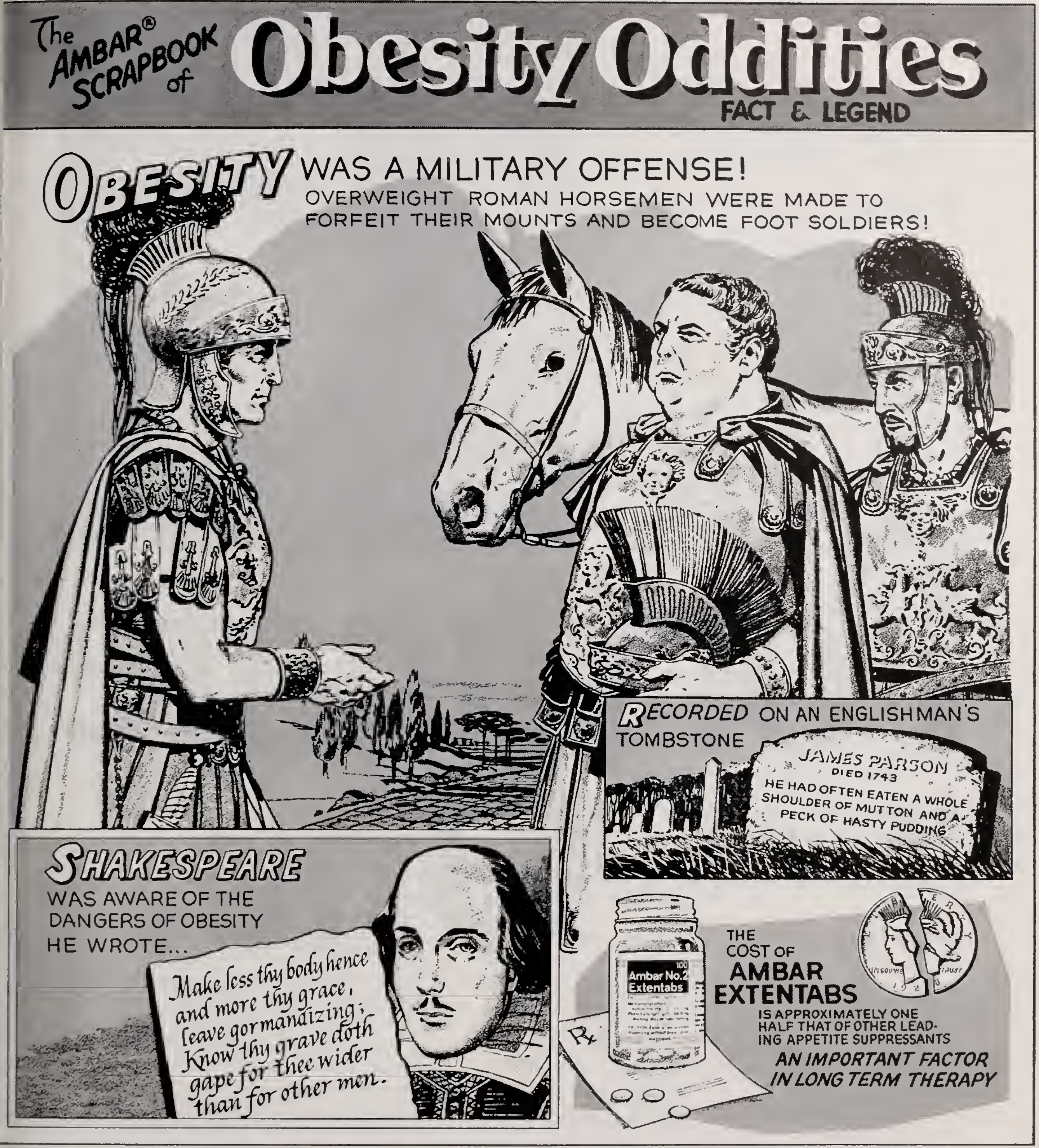
William H. Cooper, M.D.
Chairman, D.C. Political Action Committee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Before prescribing, please consult complete product information, a summary of which appears on opposite page.

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(Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.)

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Gantanol®
(sulfamethoxazole)
for the pathogens

Before prescribing, please consult complete product information, a summary of which follows:

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Contraindicated in sulfonamide-sensitive patients, pregnant females at term, premature infants, newborn infants during the first three months of life, glomerular nephritis, severe hepatitis, uremia and pyelonephritis of pregnancy with gastrointestinal disturbances.

Warnings: Use only after critical appraisal in patients with liver damage, renal damage, urinary obstruction or blood dyscrasias. If toxic or hypersensitivity reactions or blood dyscrasias occur, discontinue therapy. In closely intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed.

Precautions: Observe usual sulfonamide therapy precautions including maintenance of an adequate fluid intake. Use with caution in patients with histories of allergies and/or asthma. Patients with impaired renal function should be followed closely since renal impairment may cause excessive drug accumulation. Occasional failures may occur due to resistant microorganisms. Not effective in virus and rickettsial infections.

Adverse Reactions: Headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, Stevens-Johnson syndrome, injection of the conjunctiva and sclera, petechiae, purpura, hematuria or crystalluria may occur, in which case the dosage should be decreased or the drug withdrawn.

Dosage: Adults—4 tablets initially, then 2 tablets morning and evening.

How Supplied: Tablets, bottles of 50.

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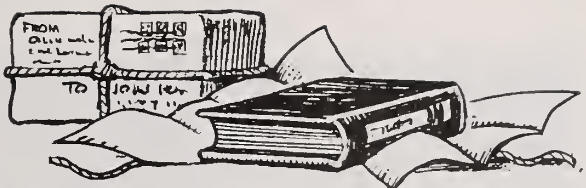

Books Received

Medical Department, United States Army: Medical Supply in World War II. Colonel Robert S. Anderson, Editor-in-Chief; Charles M. Wiltse, Ph.D., Litt. D., Editor for Medical Supply. Prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army. Price, $8.25. Pp. 662, with 149 illustrations. Washington, D.C. 20402: U.S. Government Printing Office, 1968.

Diseases of the Nose, Throat and Ear, 11th ed. John Jacob Ballenger, M.D. Price, $32.50. Pp. 948, with 567 illustrations. Philadelphia: Lea & Febiger, 1969.

The Evolution of Preventive Medicine in the United States Army, 1607–1939. Stanhope Bayne-Jones, M.D.; Colonel Robert S. Anderson, MC, USA, Editor-in-Chief. Prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army. Price, $2.50. Pp. 255, with 39 illustrations. Washington, D.C. 20402: U.S. Government Printing Office, 1968.

Diagnosis and Management of Pain Syndromes, 2nd ed. Bernard E. Finneson, M.D., F.A.C.S. Illustrations by Barbara R. Finneson. Price, $12.50. Pp. 337, with 207 illustrations. Philadelphia: Saunders, 1969.

Medical Interviewing: A Programmed Manual. Robert E. Froelick, M.D., and F. Marian Bishop, Ph.D., M.S.P.H. Price (paper), $4.75. Pp. 116. St. Louis: Mosby, 1969.

Basic Diagnostic Radiology. An Introductory Textbook for Students in the Medical Sciences. Malcolm D. Jones, M.D. Price, $11.75. Pp. 266, with 511 illustrations. St. Louis: Mosby, 1969.

Pulmonary Emphysema and Related Lung Diseases. Theodore Rodman, M.D., and Francis H. Sterling, M.D. Price, $27.50. Pp. 468, with 294 illustrations. St. Louis: Mosby, 1969.

Collateral Circulation in Clinical Surgery. Edited by D. E. Strandness, Jr., M.D., with 8 contributors. Price, $18.50. Pp. 633, with 242 illustrations. Philadelphia: Saunders, 1969.

Special Statistical Series: Medical School Alumni, 1967. Physician statistics by medical school. C. N. Theodore, G. E. Sutter, and J. N. Haug Price (paper), $4.00. Pp. 672. Chicago: American Medical Association, 1968.

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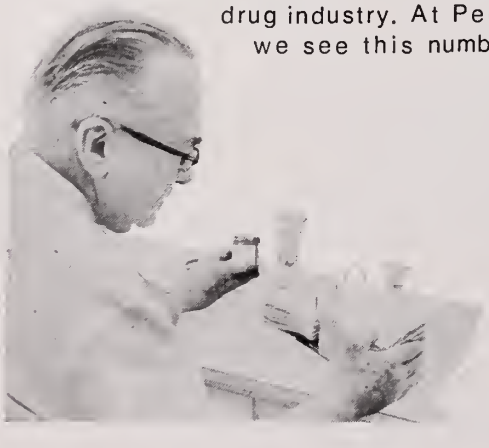

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August 10–14: National Medical Association. Hilton Hotel, San Francisco. Address: Mr. Samuel C. Smith, Administrative Secretary, 520 W Street, N.W., Washington, D. C. 20001.

August 14–15: Third Annual Symposium on Sports Medicine. Germantown Academy, Fort Washington, Pa. Address: The Germantown Academy, Fort Washington, Pa. 19034.

August 24: American Association of Nursing Home Physicians. Shoreham Hotel, Washington. Address: Dr. Raymond T. Benack, President, 4115 Colie Drive, Wheaton, Md. 20906.

August 24–29: International Congress of Gerontology. Sheraton-Park Hotel, Washington. Address: Secretary, International Congress of Gerontology, 9650 Rockville Pike, Bethesda, Md. 20014.

September 4–6: American Association of Obstetrics and Gynecology. The Homestead, Hot Springs, Va. Address: Dr. Robert B. Wilson, Secretary, 200 First Street, S.W., Rochester, Minn. 55901.

September 5–7: Tidewater Heart Association. Williamsburg Lodge and Conference Center, Williamsburg, Va. Address: Tenth Annual CV Symposium, Tidewater Heart Association, 523 Boush Street, Norfolk, Va. 23510.

September 14–17: Association of Medical Illustrators. Washington Hilton Hotel, Washington. Address: Association of Medical Illustrators '69 Meeting, P.O. Box M507, Washington, D. C. 20012.

September 14–20: College of American Pathologists. Palmer House, Chicago. Address: Mr. Oliver J. Neibel, Jr., Executive Director, 230 North Michigan Ave., Chicago, Ill. 60601.

September 14–21: American Society of Clinical Pathologists. Palmer House, Chicago. Address: Mr. Albert G. Boeck, Jr., Executive Director, 710 South Wolcott Ave., Chicago, Ill. 60612.

September 15–16: Congress on Occupational Health. Stouffer Riverfront Inn, St. Louis, Mo. Address: AMA Department of Occupational Health, 535 North Dearborn Street, Chicago, Ill. 60610.

September 20–27: World Congresses of Neurological Sciences. New York Hilton Hotel, New York. Address: World Congresses of Neurological Sciences, 420 Lexington Ave., Suite 417, New York, N. Y. 10017.

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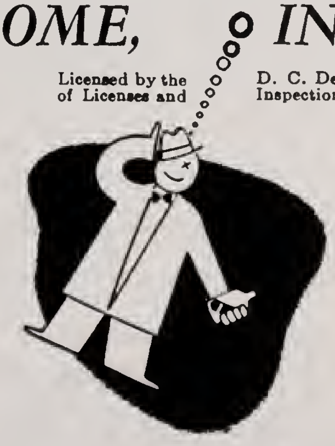

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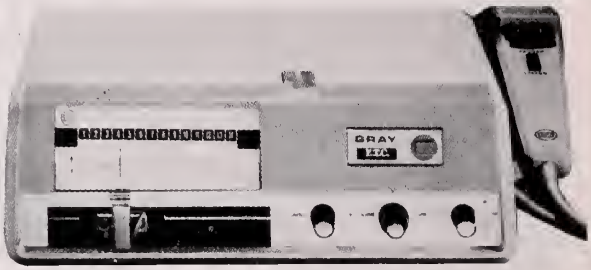

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Contraindications: Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.
Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reaction (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.
Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.
Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine hydrochloride). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

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Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).

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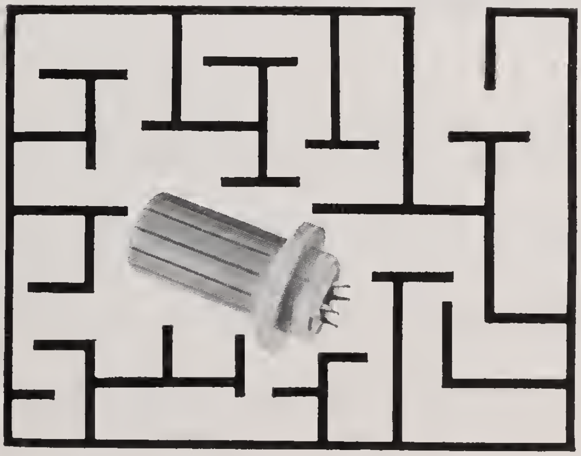

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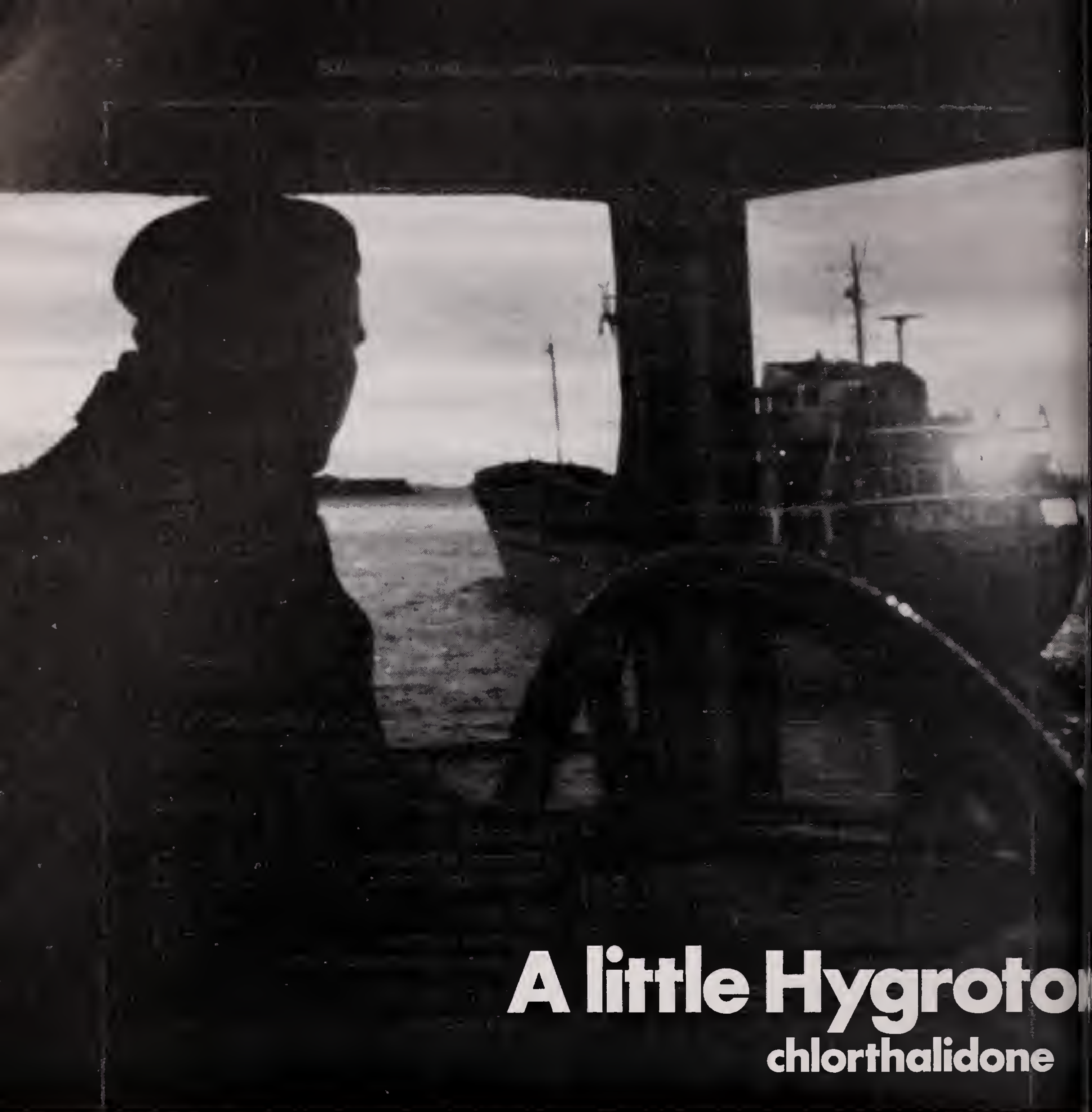

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economy.

roton, chlorthalidone, can cause side effects. And it's contra-
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ck the prescribing information. It's summarized on the next page.

Geigy

A little Hygroton® can work a long diuretic day

chlorthalidone

Indications: Hypertension and many types of edema involving retention of salt and water.

Contraindications: Hypersensitivity and most cases of severe renal or hepatic diseases.

Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has been required frequently and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur.

Use with caution in pregnant women and nursing mothers since the drug may cross the placental barrier and appear in cord blood and since thiazides may appear in breast milk. The drug may result in fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. When used in women of childbearing age, balance benefits of drug against possible hazards to fetus.

Precautions: Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated.

Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.

Take special care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.

Adverse Reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, glycosuria, hyperuricemia, headache, muscle cramps, orthostatic hypotension, which may be potentiated when chlorthalidone is combined with barbiturates, narcotics or alcohol, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashes, urticaria, purpura, necrotizing angiitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization.

Average Dosage: 50 or 100 mg. with breakfast daily or 100 mg. every other day.

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For full details, please see the complete prescribing information.

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HY-6574

The burdened heart...

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under months of age. Acute narrow angle glaucoma.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms have occurred following abrupt discontinuance. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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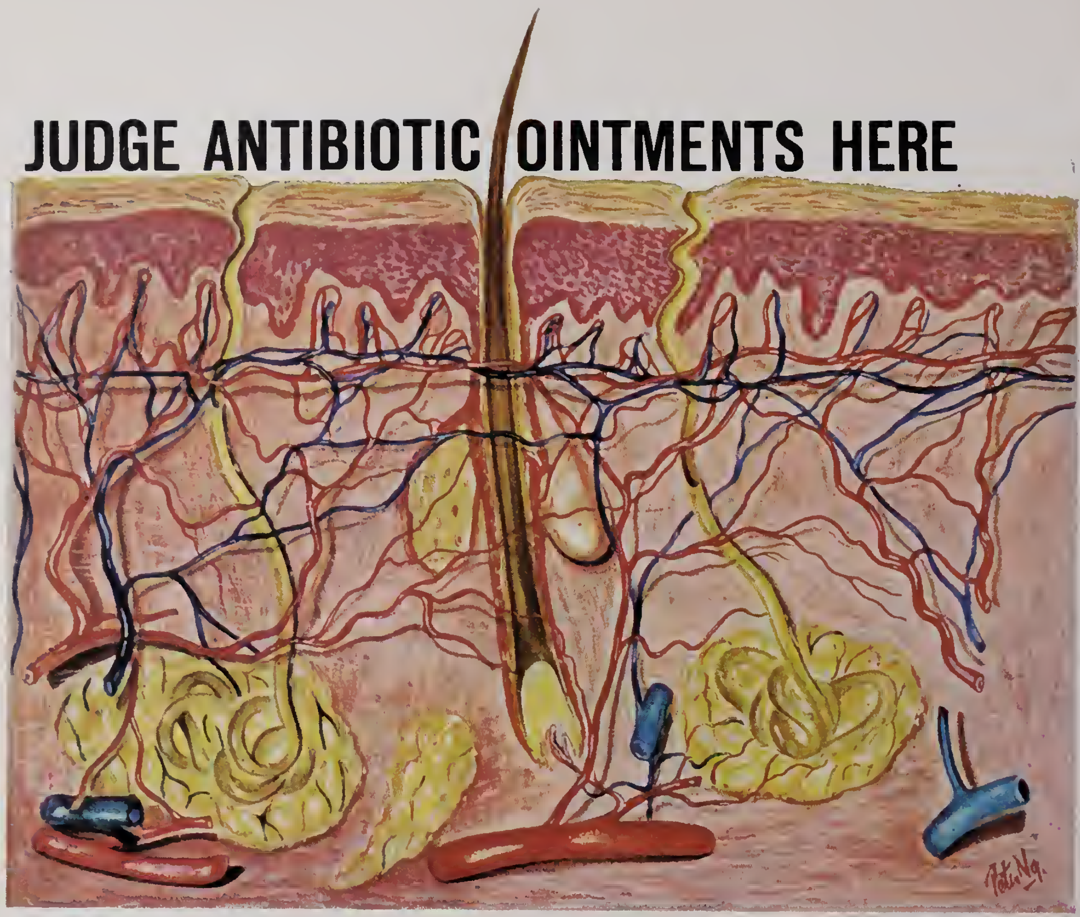

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Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.
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August
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PROGRAM ISSUE
Annual Scientific Assembly
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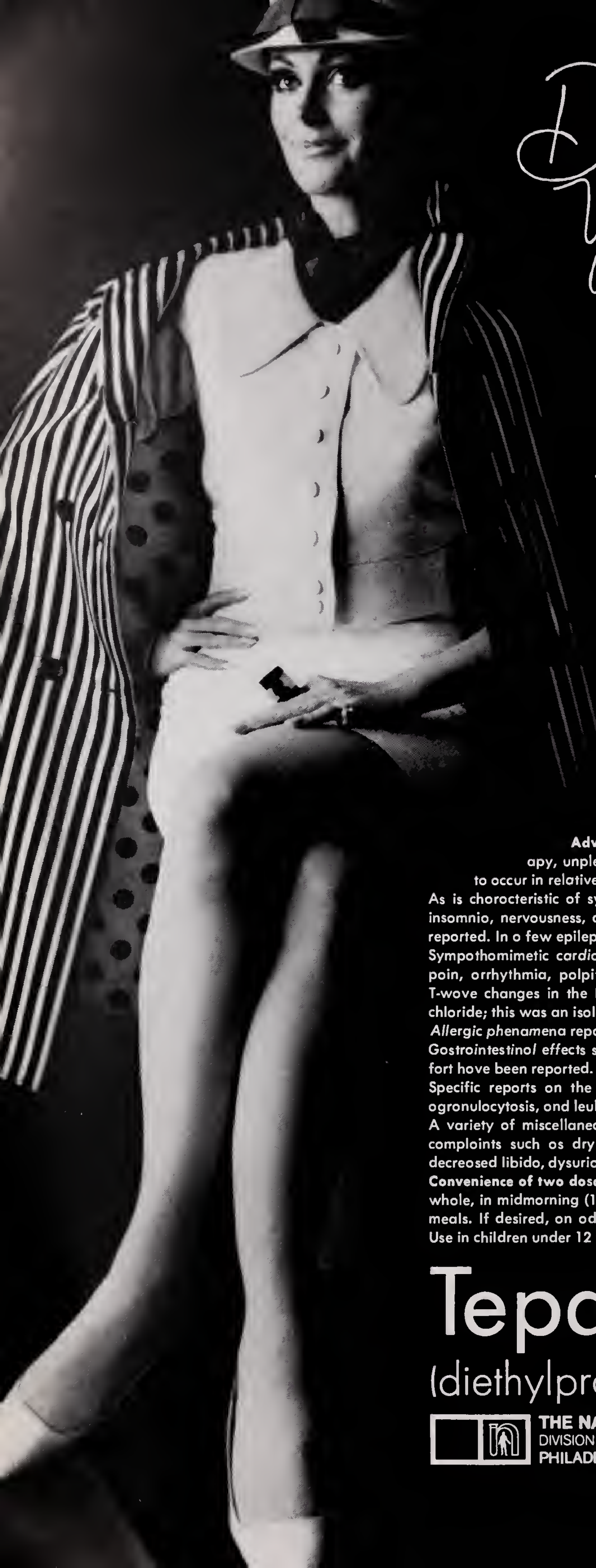

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Gastrointestinal effects such as diarrhea, constipation, nausea, vomiting, and abdominal disco fort have been reported.

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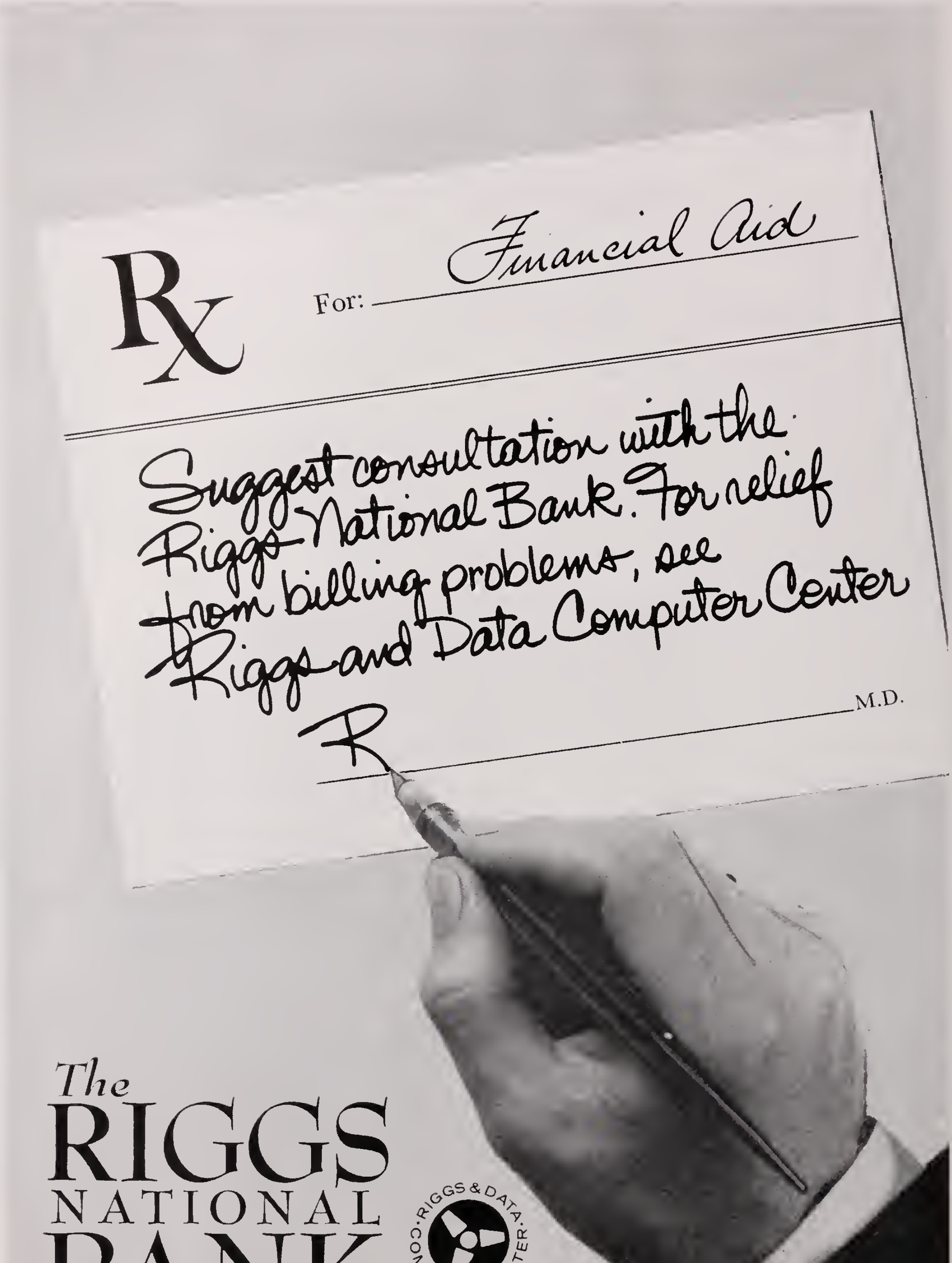

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traindication: History of hypersensitivity to demethylchlortetracy-
e or nystatin.

ning: In renal impairment, usual doses may lead to excessive accum-
ion and liver toxicity. Under such conditions, lower than usual doses
indicated, and, if therapy is prolonged, serum level determinations
be advisable. A photodynamic reaction to natural or artificial sun-
t has been observed. Small amounts of drug and short exposure may
luce an exaggerated sunburn reaction which may range from ery-
na to severe skin manifestations. In a smaller proportion, photo-
rgic reactions have been reported. Patients should avoid direct
sure to sunlight and discontinue drug at the first evidence of skin
omfort. Necessary subsequent courses of treatment with tetracy-
es should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

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A Division of American Cyanamid Company, Pearl River, New York

A little Hygroto
chlorthalidone

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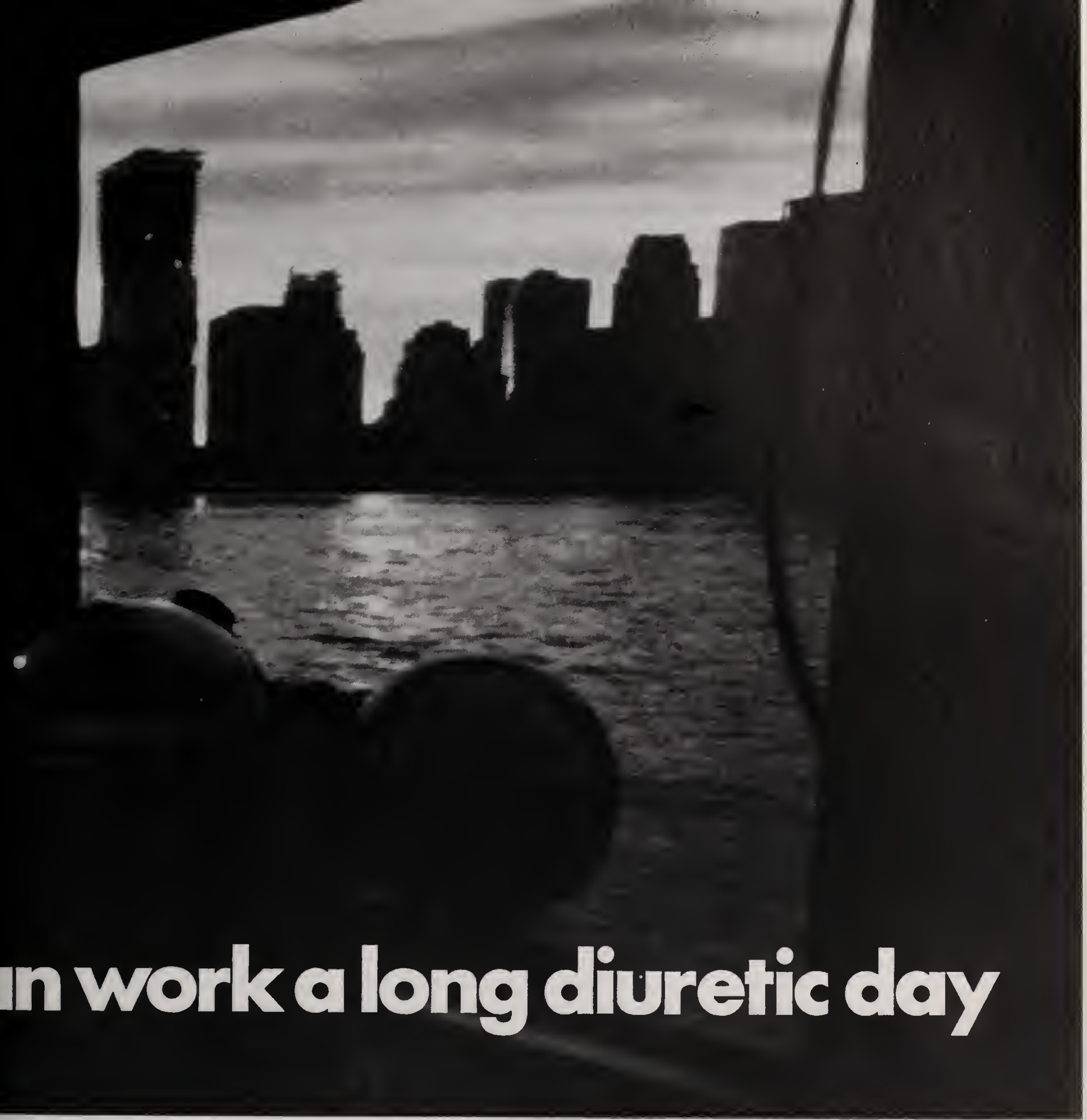

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the prescribing information. It's summarized on the next page.

Geigy

A little Hygroton® can work a long diuretic day

chlorthalidone

Indications: Hypertension and many types of edema involving retention of salt and water.

Contraindications: Hypersensitivity and most cases of severe renal or hepatic diseases.

Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has been required frequently and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur.

Use with caution in pregnant women and nursing mothers since the drug may cross the placental barrier and appear in cord blood and since thiazides may appear in breast milk. The drug may result in fetal or neonatal jaundice, thrombacytopenia, and possibly other adverse reactions which have occurred in the adult. When used in women of childbearing age, balance benefits of drug against possible hazards to fetus.

Precautions: Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated.

Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.

Take special care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.

Adverse Reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, glycosuria, hyperuricemia, headache, muscle cramps, orthostatic hypotension, which may be potentiated when chlorthalidone is combined with barbiturates, narcotics or alcohol, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashes, urticaria, purpura, necrotizing angiitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization.

Average Dosage: 50 or 100 mg. with breakfast daily or 100 mg. every other day.

Availability: White, single-scored tablets of 100 mg. and aqua tablets of 50 mg., in battles of 100 and 1000.
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Contraindications: Hypersensitivity to any component.

Warning: In renal impairment, since liver toxicity is possible, lower doses are indicated; during prolonged therapy consider serum level determinations. Photodynamic reaction to sunlight may occur in hypersensitive persons. Photosensitive individuals should avoid exposure; discontinue treatment if skin discomfort occurs.

Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).

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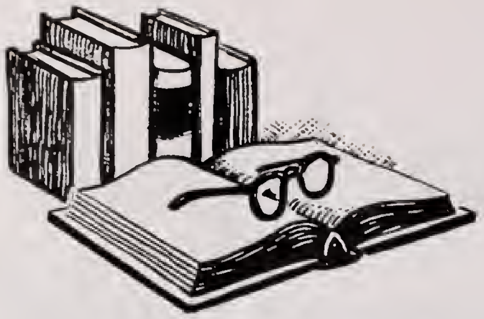

Book Reviews

Current Diagnosis-2. Edited by Howard F. Conn, M.D., and Rex B. Conn, Jr., M.D.; 332 contributors. Price, $21.75. Pp. 990. Philadelphia: Saunders, 1968.

This second edition of "Current Diagnosis" is written by over 300 authors. It is divided into 19 sections that cover pediatrics, obstetrics, gynecology, neurology, psychiatry, dermatology, otolaryngology, and the various subspecialties of internal medicine. In each section different medical topics are treated in separate articles. Each article includes symptoms, signs, physical abnormalities, and laboratory findings of a given disease. The topic of an article may be a classic disease entity, a group of related disorders, or merely a symptom complex in areas where a clear classification of disease is not possible at present. A few articles are illustrated in black and white. A very few references are cited by some of the authors.

This book should be of considerable value in office practice as a concise source of current diagnostic information particularly in the area of laboratory investigation. In treatment the various topics are relatively uneven as to length and depth. The stated purpose of the editors is very adequately served, however, and the book belongs next to its companion volume, "Current Therapy," on the physician's desk.

Garo S. Matossian, M.D.

Current Therapy 1969. Latest Approved Methods of Treatment for the Practicing Physician. Edited by Howard F. Conn, M.D., with 12 Consulting Editors. Price, $15.00. Pp. 945. Philadelphia: Saunders, 1969.

This is the twenty-first edition of this valuable, usually thorough, and authoritative textbook. The first edition was published in 1949, and each year extensive revisions have been made. In addition to the 12 consulting editors, there are 348 contributing authors, most of whom are well recognized experts in their various fields.

This edition is up-to-date and contains much valuable information on the most recent therapeutic advances. The therapy of each disease is discussed fully by one of the contributors, and frequently there are informative comments concerning the nature of the disease and laboratory and physical findings. The volume is well organized and indexed. There are 15 different sections encompassing the various medical fields. In addition, on the inside of the covers there are extensive tables of normal laboratory values. Deleted from this edition is a valuable section which had been previously present, a discussion of drugs and their composition and a thorough discussion of the clinical features, laboratory findings, and therapy of many conditions causing fluid and electrolyte imbalance.

One of the fine features of this text is the usually thorough and practical approach of the various authors to their subjects. As one would expect in a text of this nature there are opinions as to therapy with which some will disagree. However, because of the excellent selection of authors and editors the amount of controversial material is very small. This is an excellent review of current therapy and is highly recommended to those interested in the treatment of medical diseases.

Arthur Burgerman, M.D.

Atlas of External Diseases of the Eye. Volume II. Orbit, Lacrimal Apparatus, Eyelids, and Conjunctiva. David D. Donaldson, M.D. Price, $46.50. Pp. 301, with 174 figures; 112 stereoscopic views in full color on 16 View®-Master reels and a View®-Master compact viewer. St. Louis: Mosby, 1968.

The reader is permitted to share the most illustrative examples from Dr. Donaldson's vast experience in the Howe Laboratory of Ophthalmology, Harvard University Medical School, and the Massachusetts Eye and Ear Infirmary.

The approach is completely clinical, and the book is completely enjoyable. The cases are all concisely and clearly presented.

The stereoscopic pictures by themselves are almost worth the price of the book. A compact, collapsible viewer comes with the book, which is convenient, but in order to do justice to the magnificent pictures, the reader really should provide himself with a self-illuminated, adjustable focus viewer. (These are available from most camera shops and toy stores.)

The references from the text to the pictures are clear. There is a convenient, brief, selected bibliography. The index is adequate. The paper, printing, and binding are excellent.

While this book cannot properly be called a necessity in every library, it is the most delightful luxury that I have seen for several years. It is very useful in a teaching program. Surely every ophthalmologist would enjoy it.

Robert P. Kling, M.D.

(Continued on page 16)

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Book Reviews

(*Continued from page 14*)

Symposium on Ocular Therapy. Volume III. Under the auspices of the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology. Edited by IRVING H. LEOPOLD, M.D. Price, $13.00. Pp. 143, with 17 illustrations. St. Louis: Mosby, 1968.

This volume is a record of the presentations made at the Drug Symposium of the American Academy of Ophthalmology and Otolaryngology and the Association for Research and Ophthalmology meeting, held in Chicago in the fall of 1967.

This book covers a number of areas of prime interest to ophthalmologists, including problems in the use of antibiotics, hyperosmotic agents, the effects of systemic medications on intraocular pressure, pediatric aspects of drug therapy, topical corticosteroids, and the relationship between society and the testing of new drugs.

The presentations are certainly on topics of current interest, well written, and well documented. This slender volume is recommended to ophthalmologists as an excellent source of information on this constantly changing and controversial aspect of medical practice.

LAURENCE E. RUBIN, M.D.

An Atlas of Pelvic Operations, 2nd ed. LANGDON PARSONS, M.D., AND HOWARD ULFELDER, M.D. Illustrated by MILDRED B. CODDING, A.B., M.A. Price, $24.00. Pp. 448. Philadelphia: Saunders, 1968.

This large publication (11 by 14 inches, with 448 pages) is divided into 3 sections: I. Abdominal Operations; II. Vaginal and Perineal Operations; and III. Operations for Malignant Disease.

It is not a surgical textbook but an "Atlas" consisting of countless illustrations of the essential steps in the performance of the many and varied gynecologic operations. Several intestinal and urologic procedures have been included, and the section on malignant disease has been completely revised.

The authors' succinct comments and helpful hints are clearly coördinated with the illustrations and make for fast reading and understanding.

The text is primarily designed for the gynecologic surgeon but is recommended for all who operate in the pelvic area.

EARL D. NESLEN, M.D.

The Mentally Abnormal Offender. A Ciba Foundation Symposium. Edited by A. V. S. DE REUCK AND RUTH PORTER. Price, $10.00. Pp. 260, with 2 illustrations. Boston: Little, 1968.

Continuing professional interest in forensic psychiatry makes this publication timely, but, unfortunately, it is disappointing. The volume is a collection of papers and discussions presented at an international con-

(*Continued on page 18*)

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Book Reviews

(Continued from page 16)

ference in 1967 sponsored by the Ciba Foundation. Most of the participants in the symposium are European experts whose papers are brief, summarizing reviews of some aspect of the problem. Some of the papers deal with clinical categories, others with the social (i.e., community) or legal aspects of the problems of antisocial behavior in the mentally abnormal.

Much of the material is too general and perhaps too elementary for the professional reader. There is little presentation of the dynamic aspects of the antisocial behavior which is a manifestation of mental illness. We are no longer satisfied to know that the offender is mentally ill; today we ask how is the offense related to or a product of the abnormality. However, there were illuminating data on how various European clinics treat the sick offender. Some of the recorded extemporaneous discussions (not always relevant to the papers) provide the most interesting portions of the book. As often happens with collections of papers, this book lacks a cohesiveness.

NORMAN TAUB, M.D.

Pulmonary Emphysema and Related Lung Diseases. THEODORE RODMAN, M.D., AND FRANCIS H. STERLING, M.D. Price, $27.50. Pp. 468, with 294 illustrations. St. Louis: Mosby, 1969.

It was indeed a delight to review a textbook such as this one. The authors have quite adequately reached their intended goals in this writing, as clearly stated in the book's preface. The text reads well and easily for both the pulmonary specialist and the general practitioner.

This textbook deals primarily with the spectrum of chronic bronchitis and pulmonary emphysema. It is divided into 2 major sections, diagnosis and treatment. Each chapter is followed by an adequate and nicely updated bibliography, citing many of the more classic and important reports related to each subject discussed.

A textbook such as this has been badly needed for some time. The authors have done an admirable job of bringing together in a clear, concise manner the present state of our knowledge of the "emphysema bronchitis complex." Considering the many gaps in our knowledge and the many conflicting studies which abound in the literature, Drs. Rodman and Sterling have been unusually objective in their discussions. The sections dealing with inhalation therapy, physical therapy and medicine, and rehabilitation modalities of treatment are excellent.

This book should be read by all physicians who encounter chronic obstructive pulmonary diseases and should become a part of the library of all who are interested in the problems of chronic obstructive pulmonary diseases. It is an invaluable investment for $27.50.

JOSEPH C. CHISHOLM, JR., M.D.

Introduction to Medical Science. CLARA GENE YOUNG AND JAMES D. BARGER, M.D., F.A.C.P. Price, $7.95. Pp. 295, illustrated. St. Louis: Mosby, 1969.

This book is nicely bound and neatly enclosed in a colorful hardback. The preface is a mirror of its theme. In compact form it contains a wealth of basic medical information in simple, understandable phrases and terms selected for the interested reader. Health-related but qualified personnel will be highly motivated and scientifically stimulated to perform actively within the framework of total health care. As a result they will be able to free their minds from the entanglement of routine mechanical duties which lead to eventual lethargy and a feeling of inadequacy.

This minitext, 7 by 10 inches, consists of 275 pages divided into 24 chapters, 7 of which cover selected diseases of individual systems. The chapter on infectious diseases is elaborate, with a helping table of differentials located at Appendix B. The same can be said about those on inflammation, neoplasms, circulation, metabolic derangements, vitamins and many others.

The chapters covering the selected clinical systems are well organized and sufficiently informative, placing emphasis upon the disease entity rather than the details of their implications or complications. The physiology of the body is well summarized before the authors discuss the pathogenesis of the disease or its manifestations. A new plan of study has been introduced which will enable the reader to recognize and select the points which are meaningful for him. Those who instruct others will find that such a system will contribute to the betterment of their teaching methods.

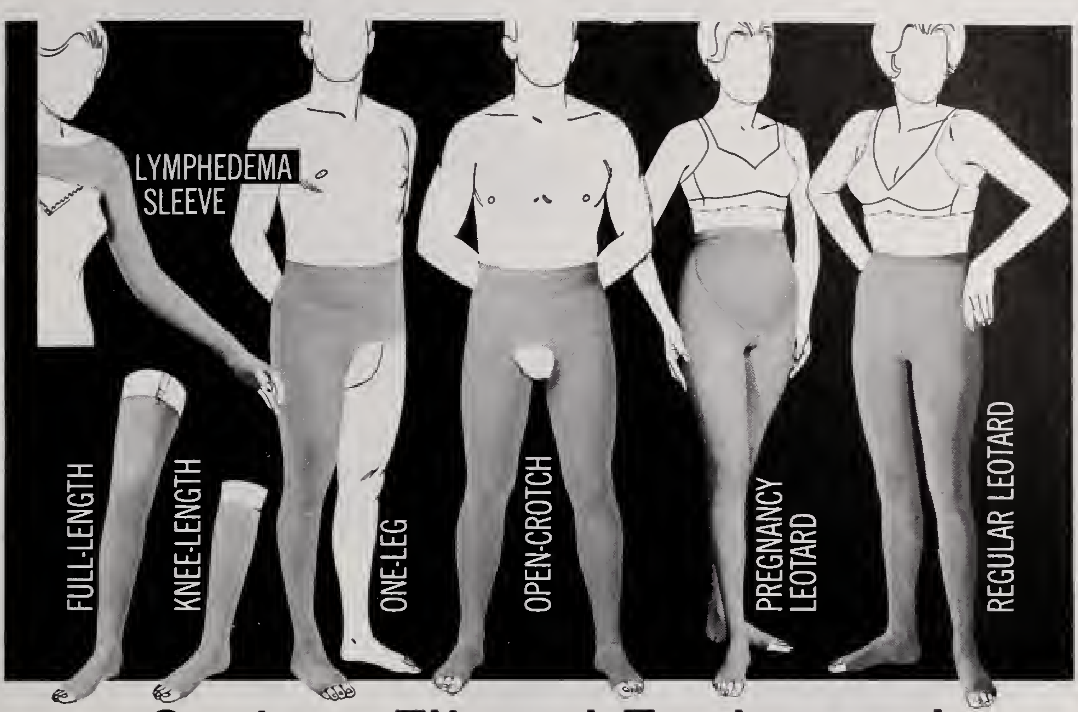
Those who enjoy a test of memory will get their practice on the Quiz Questions at the end of each chapter.

The book is extremely rich with references on each subject.

I believe that the authors have intentionally left out a few items which are traditionally found in books on similar topics and which might have attracted a wider audience. Illustrations were omitted except in the chapter on the heart and its congenital anomalies. Highlights of human anatomy would have been of interest to many readers, and general management or treatment could have completed the clinical subject.

I find it quite unique to note that repetition of descriptive manifestations has been avoided in contradistinction to what we usually encounter in medical textbooks. Nevertheless, I think that the effort spent in the construction of such an elaborate but concise text is commendable. This book is definitely recommended for use by selected people—the health-related or paramedical professionals who have enough scientific background to appreciate the knowledge projected through its pages.

MAHMOUD MOURAD, M.D.



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VOLUME XXXVIII • NUMBER 8

Solitary Nonparasitic Cysts of the Liver

Report of a Case

MANOOCHEHR ARFAA, M.D.,* AND NORMAN H. ISAACSON, M.D., F.A.C.S.†

THE PRESENCE of a nonparasitic cyst of the liver constitutes an uncommon and relatively benign condition which may assume an important role in the differential diagnosis of intra-abdominal masses.

Stoesser and Wangensteen[1] recorded 104 cases in 1929, and 30 years later Morgenstern[2] brought the total number of reported cases to 250. In a series of 28,000 consecutive autopsies Eliason and Smith found 28 cases of hepatic cyst, and in no instance was an antemortem diagnosis made.[3] The same authors reported only 2 correct antemortem diagnoses in 211,046 admissions to their institution. As a further indication of its rarity, only 5 cases were found in a 30-year review at the Lahey Clinic.[4]

In all, 350 cases have been reported from the world literature to date.

Report of Case

A 52-year-old white woman was admitted to the Washington Hospital Center on August 12, 1968 with a history of vague upper abdominal discomfort of 1 year's duration. The discomfort was described as a feeling of "pressure" and was unaccompanied by any gastrointestinal disturbances, weight loss, or jaundice. An upper gastrointestinal X-ray examination on July 8, 1968 revealed only a small hiatal hernia. On a routine preëmployment examination on August 15, 1968 a 12 cm. smooth epigastric mass was palpable which moved on respiration.

The patient had a cholecystectomy in 1964 for symptomatic cholelithiasis. At that time no hepatic trouble was noted. Several other hospitalizations for bronchopneumonia and pelvic repair work were unrelated to the present illness.

Upper and lower gastrointestinal X-ray examinations and pyelograms showed nothing, but there appeared to be an extrinsic pressure defect on the lesser curvature of the stomach and downward displacement of the right kidney. Bromsulfalein, cephalin flocculation, thymol turbidity, proteins A/G ratio, serum bilirubin, alkaline phosphatase, serum amylase, and lipase were all within normal limits.

A radioactive liver scan performed on August 16, 1968 disclosed a circular defect measuring 12 cm. in diameter occupying most of the left lobe of the liver (figure 1).

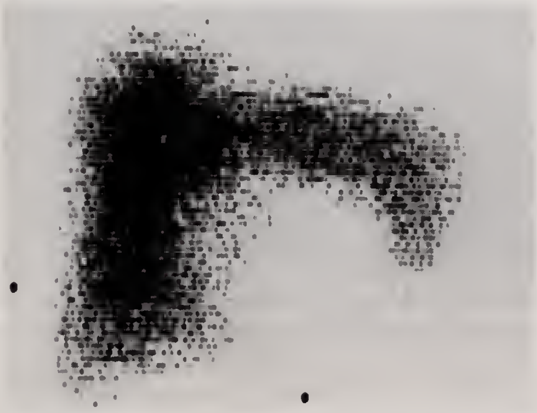

FIG. 1. Preoperative radioactive liver scan showing a 12 cm. circular defect almost replacing left lobe of liver.

On August 19, 1968 the abdomen was opened through a bilateral upper transverse incision. A 12 cm. soft mass occupying most of the left lobe of the liver was found. The remaining abdominal organs all appeared to be normal. Because of the size of the lesion, which occupied the space between the anterior abdominal wall and the spine, it was necessary to extend the incision into the left thorax through the eighth interspace. By elevating the liver and mass into the left chest the blood supply in the portal triad was easily secured, and a standard left hepatic lobectomy was performed. A choledochotomy with T-tube drainage was performed to lower the biliary pressure and diminish the leakage of bile from the liver, and a Foley gastrostomy was added for decompression of the gastrointestinal tract.

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* Fellow in Surgery, Memorial Hospital, 444 East 68th Street, New York, N. Y. 10021; formerly Chief Resident in Surgery, Washington Hospital Center, Washington, D. C.

† Attending in Surgery, Washington Hospital Center; Assistant Clinical Professor of Surgery, George Washington University School of Medicine; office: 915 19th Street, N.W., Washington, D. C. 20006.

The mass turned out to be a solitary cyst (figures 2 and 3). Microscopically the wall was lined with cuboidal epithelium and had multiple bile ducts in the wall (figures 4 and 5).

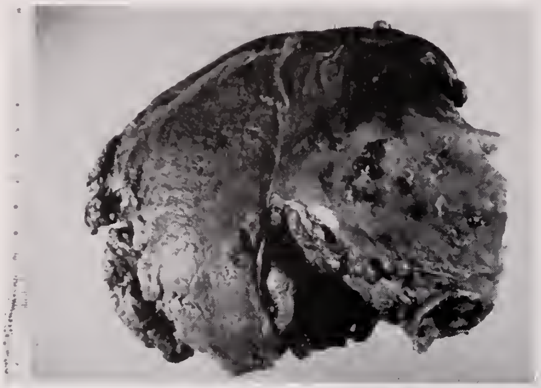

FIG. 2. Resected specimen showing external appearance of cyst.

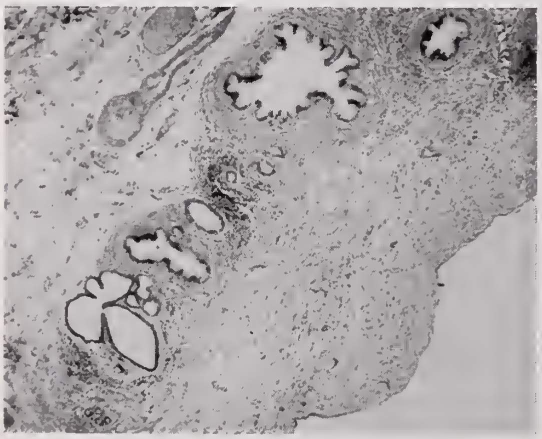

FIG. 4. Low-power magnification of wall of cyst showing concentration of bile ducts in wall.

The patient made an essentially uncomplicated recovery. She was given large doses of vitamin K and serum albumin intravenously for 1 week. There was transient elevation of the bilirubin to 3 mg., but this returned to normal in 1 week. A T-tube cholangiogram on September 3, 1968 showed normal anatomy of the remaining biliary tree, and the T-tube was removed. On September 5, 1968 she was transferred to the self-care unit and discharged from the hospital on September 10, 1968. A liver scan on November 4, 1968 showed almost complete regeneration of the normal liver mass (figure 6). She was well and back at work by November 15, 1968.

Discussion

Classification. Classification of nonparasitic hepatic cyst is not absolute. It is debatable as to whether the solitary cyst is a localized manifestation of generalized polycystic disease or is an entirely unrelated process. Most authors recognize them as separate entities. Some authors differentiate between solitary and multilocular

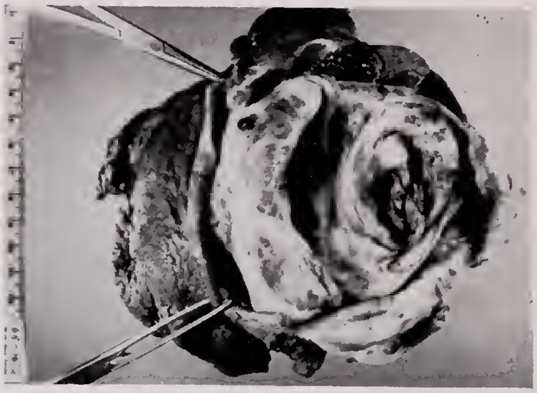

FIG. 3. Cut section of cyst showing loculateous and smooth lining.

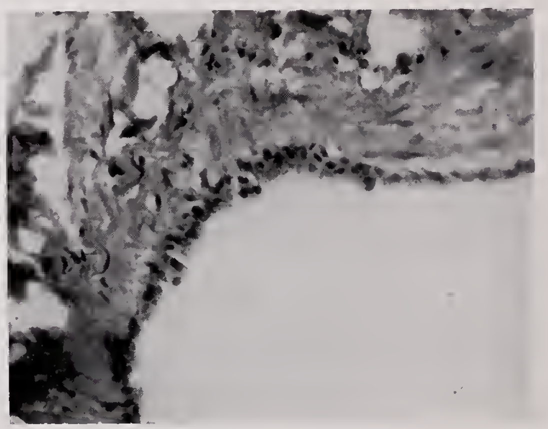

FIG. 5. High-power magnification of cyst wall showing cuboidal epithelium consistent with bile-duct origin.

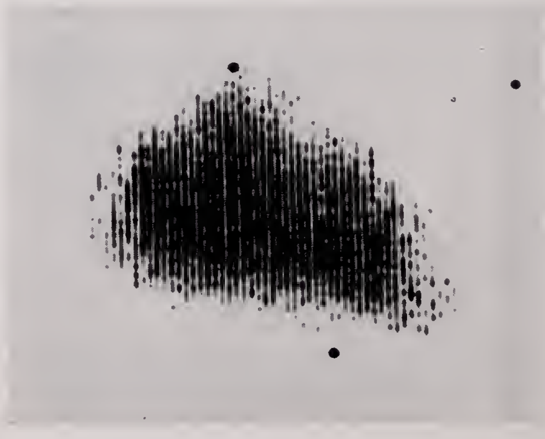

FIG. 6. Scintiscan of liver taken 10 weeks postoperatively showing almost complete regeneration of liver mass.

cysts, although both varieties are clinically similar and require the same treatment. An acceptable classification is a modification of those of Sontag[5] and Jones[6] which recognize the following entities:

1. Pseudocysts (degenerative cysts)
2. Teratomatas (dermoids or embryomatous cysts)
3. Lymphatic (lymphangiomatous cysts)
4. Endothelial (ciliated epithelial cysts)
5. Cystadenomata (proliferative cysts)
6. Hemangiomatous (blood vessel cysts)
7. Bile-duct cysts (retention cysts—solitary or multiple)

A knowledge of the types of cysts that may be encountered at operation is important in selecting the best method of treatment. Failure to recognize the type of cyst that is present can lead to improper treatment, with resultant serious complications and even death.

Pathogenesis. Etiologic factors which have been implicated in the formation of hepatic cysts include congenitally obstructed or aberrant bile ducts with cystic dilatation and localized injury or inflammation with bile duct and/or lymphatic obstruction. More recently, the analogy with respiratory malformations originating from the embryonic foregut has been presented. Neoplastic transformation of epithelial tissue and localized degenerative changes resulting from hemorrhage, infection, or trauma have also been suggested.

In 1906 Moschowitz[7] was the first to consider the etiology of the solitary nonparasitic cyst of the liver. After noting a bile-duct remnant in Glisson's capsule he propounded the theory that these cysts arise from aberrant bile ducts. In a very scholarly study of the liver from a fetus manifesting polycystic disease of numerous organs and aberrant bile ducts of the liver he concluded that these cysts were the result of inflammatory hyperplasia or obstruction of congenitally derived aberrant bile ducts or embryonic rests. The finding of such ducts in the walls of solitary and mulitple cysts tends to support this theory.

Pathology. About two-thirds of the cysts are situated or take origin in the right hepatic lobe. They can be intrahepatic, partially intrahepatic, or pedunculated. They may be either solitary or multilocular and have a low internal tension in contrast to hydatid cysts. Grossly the capsule may be thick, thin, translucent, fibrous, partially necrotic, smooth, bosselated, partially calcified, and gray-white to blue or slate gray. Cysts vary in size, from 1 cm. to those almost completely filling the abdominal cavity (usually 1 to 15 cm.). The quantity of fluid varies. In 1 case it was 17,000 ml.,[3] but the average is about 2 liters. The fluid can be thin, viscous, clear, watery, mucoid, serous, straw-colored, green, blood-tinged, or grossly hemorrhagic, with a specific gravity of 1.007 to 1.024. It usually contains cellular material, protein, albumin, and cholesterol and is alkaline. Bilirubin and bile are uncommonly present.

Microscopically the wall is primarily composed of connective tissue with an inner lining of a single layer of cuboidal epithelium resembling that of bile ducts. In some of the cysts the lining may be absent because of degeneration.

There is no report of malignant degeneration in the literature, and only 1 report of malignant degeneration in polycystic liver disease has been found.[3]

Clinical findings. Hepatic nonparasitic cysts may occur at any age,[8] the youngest being reported in a fetus and the oldest in an 87-year-old. The average age is 40 to 50 years. It is more common in the female than the male and is mostly seen in the Caucasian.

Most hepatic cysts are slow-growing and asymptomatic.

In symptomatic cases the most common complaints are pain and/or abdominal mass. The pain may be of 2 types. Most frequently it is a dull, aching sensation aggravated by motion or change of posture. This type probably results from distention of the liver capsule and traction on the liver ligament. Occasionally the pain is acute, sharp, and intermittent, resulting from hemorrhage in the cyst or torsion of the cyst on its pedicle. Other symptoms are bloating, indigestion, constipation, diarrhea, emesis, and flatulence as a result of extrinsic pressure of the cyst on the gastrointestinal tract.

Jaundice is only rarely described (9 per cent),[9, 10, 11] and then it is usually secondary to external pressure on the extrahepatic biliary system. If the cyst should burst into the peritoneal cavity, severe shock ensues from the resultant peritonitis.

Progressive enlargement of the cyst may be complicated by hemorrhage into the cyst, perforation of the cyst with death from shock, torsion, or secondary bacterial invasion with inflammation and development of an abscess. Hepato-enteric fistula has also been reported. Nausea, vomiting, shortness of breath, bleeding, pleuritic pain, and weight loss indicate this.[12]

Six cases of spontaneous or traumatic rupture have been reported.[2, 13-17] Strangulation of a pedunculated solitary cyst has been mentioned.[18]

Physical examination reveals a mass in the right upper abdomen contiguous with the liver, which moves with respiration. The consistency is elastic; the tumor is fluctuant, movable, and usually only slightly tender, if at all. Liver dullness is increased. Jaundice is rarely present, and ascites is unusual. Friction rub or a hydatid-type thrill occurs rarely. Cysts may be palpable during pelvic examination.[19]

Laboratory aids for diagnosis. Except in those cases reported with jaundice, laboratory data are unremarkable, and liver function tests are almost always within normal limits. Occasionally the serum transaminases, alkaline phosphatase, thymol turbidity, bromsulfalein, or cephalin flocculation test may be individually abnormal but they adhere to no diagnostic pattern.[20, 21] Abnormal liver function tests occur more frequently in polycystic liver disease.

X-ray examinations are not diagnostic. One may find the following abnormalities singly or in combination: (1) elevation of either diaphragm, (2) displacement of the stomach, gallbladder, duodenum, colon, or right kidney, (3) duodenal or antral obstruction, (4) hydronephrosis and hydro-ureter. Correct preoperative diagnosis is a rarity, and only 9 cases have been recorded.[19, 21-25]

Melnick[21] was able to correctly diagnose this entity with rapid intravenous dye injection and tomographic films of the liver. In the presence of normal hepatic opacification, nonopacification of the mass in question indicated the avascularity that would occur in a cyst.

Radioactive liver scan and angiography may be of value in the evaluation of this entity, demonstrating a space-occupying lesion (figure 1). As in our case, this may not be completely diagnostic.

The use of angiography in the evaluation of intra-abdominal masses has proved helpful in diagnosis and management.[26, 27] The development by Bierman et al[28] and Morino et al[29] of the technique of selective catheterization of branches of the aorta by injection of contrast media provided a method for clear visualization of the vasculature of the abdominal viscera without superimposition of other vessel image. The technique described by Seldinger[30] in 1953 for percutaneous catheterization of the aorta and its application to the selective catheterization of its branches by Odman and others[31, 32] established angiography with scintiscanning. It is used with increasing frequency and often yields more gratifying results than either technique alone.

The angiographic demonstration of circumscribed areas of hypervascularization with "abnormal" vessels and "pooling" of the contrast medium is usually attributed to the presence of a malignant tumor, but inflammatory conditions may show similar changes and be mistaken for a tumor. In the absence of vascularization a space-occupying lesion should be suspected of being a cyst. Peritoneoscopy was diagnostic in 1 of 70 cases in Los Angeles General Hospital.

At the time of the operation the fluid should be checked for scolices in order to exclude the possibility of an echinococcal cyst. Casoni skin test prior to surgery may be helpful in ruling out this possibility. The presence of eosinophilia would also suggest this possibility.

Differential diagnosis. Such diagnoses as cholecystitis, choledochal cysts, cirrhosis, hepatic gumma, hemangioma, hydrops of the gallbladder, hepatoma, pancreatic pseudocyst, mesenteric cyst, ovarian or renal cyst, retroperitoneal tumor, and carcinoma of the liver or stomach are more commonly entertained.

Differentiation between echinococcal cysts and cystic disease of the liver may be difficult, but because of possible anaphylactic reactions or peritoneal "seeding" during surgical exploration, every effort must be made to make a definitive preoperative diagnosis. Radiologically, echinococcal cysts contain calcification whereas calcium is rarely seen in congenital hepatic cysts. The presence of eosinophilia and positive Casoni test are also helpful.

Treatment. Surgical intervention is, of course, necessary when signs of peritoneal irritation or rupture occur. When a congenital cyst has been found at laparotomy various means of reducing or removing the cyst have been tried. These include aspiration, drainage by marsupialization, anastomoses to the intestinal tract and stomach, drainage into the peritoneal cavity, and complete excision. If technically possible complete excision is the surgical treatment of choice. Marsupialization is the poor second choice because it is complicated by a persistent sinus tract and repeated infection. Injection of a sclerosing agent into the cyst has been tried with poor results.

Although the following statistics are from earlier work, reëvaluation of the data is of some interest.

Davis[16] in 1937 reviewed 229 cases of cystic liver disease, solitary and multiple, managed surgically by aspiration, opening and draining the cyst, marsupialization, evacuation of the cyst and suturing it so as to obliterate the center without draining, partial excision of the cyst, and anastomosis of the cyst to the small bowel. Fifty deaths occurred with a mortality rate of 22.1 per cent. In 1955 Geist[33] reported a mortality rate of only 5.1 per cent. However, analysis by Sanders and Garrett[34] of 193 cases revealed that 53 were found incidentally at autopsy. In 12 of the surgical cases no follow-up was reported. In 128 cases with follow-up there were 12 deaths following operation, resulting in a corrected mortality of 9.4 per cent. Death most commonly occurred in the immediate postoperative period from hemorrhage and circulatory collapse. Postoperative complications including chronic sinus drainage, recurrence of the cyst, and infection with abscess, subphrenic abscess, and/or septicemia are not uncommonly encountered. In only 3 cases in the literature were the patients treated medically.[34] Because of the high mortality (9 to 22 per cent) and morbidity from surgical management and the low incidence of significant complications in those not surgically treated, congenital hepatic cysts should be managed medically if symptoms are minimal and the diagnosis well established.

Caplan and Simon[14] recently reported 5 cases of nonparasitic cysts of the liver, 2 of which had solitary cysts treated medically with no complications in a varying period of follow-up.

Of interest historically, Keen[35] credited the first hepatic resection to Lagenbuck in 1888. The first successful lobectomy for a cyst involving the entire left hepatic lobe was done by Von Haberer in 1908.[36]

The overall mortality for this disease according to Flagg and Robinson,[11] in a series of 193 patients, was 5.1 per cent. In this series there were 3 recurrences of the cyst following the original operation; 2 followed subtotal excision and 1 marsupialization.

Some have advocated partial excision of the cyst and packing the bed with Gelfoam® or oversewing it with a tampon of omentum.

Hepatic lobectomy or partial hepatectomy may need to be considered, particularly if recurrence of the cyst should develop after simple excision. In the course of surgical dissection it is absolutely essential to identify the portal triad,[4] and both hepatic ducts should be dissected to the hilus of the liver. If this is carried out early in the procedure many complications and deaths can be avoided. Beattie and Robertson's mortality with lobectomy was 20.9 per cent.[37]

If one considers only the cases published from 1924 to 1955 the mortality figure is sharply reduced to 2.4 per cent[38] when treated surgically.

Summary

Solitary hepatic cysts, although infrequent, have a more favorable course than polycystic disease involving the liver. They must be carefully differentiated from echinoccal cysts of the liver to avoid complications encountered from leaking fluid at operation or biopsy. Using the liver scan, tomograms, radiographic studies of the gastrointestinal and urinary systems in the patient with hepatomegaly but without altered liver function, a presumptive diagnosis of a solitary hepatic cyst may be made before surgical exploration or autopsy.

The operative mortality ranges between 5.1 to 22 per cent. Emphasis has been placed on the medical management of uncomplicated cysts of the liver.

In this paper the entity of solitary nonparasitic cysts of the liver has been reviewed. Approximately 350 cases have been documented. The recommended treatment for symptomatic cysts is complete excision except in poor-risk patients or if the procedure would be technically too difficult. Then, simple drainage, internal drainage, or marsupialization should be used.

A case of solitary unilocular cyst of the liver has been reported successfully treated by left hepatic lobectomy. Differentiation from degenerating hepatocellular carcinoma was impossible by preoperative studies and at surgery.

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Bleeding Leiomyoma of the Duodenum Demonstrated by Selective Angiography

Report of a Case

MAJOR RAFAEL A. RIVERA, MC, USA,* MAJOR JORGE GUTIERREZ, MC, USA,† AND LT. COLONEL WILLIAM P. MAHONEY, MC, USA‡

THE SUCCESS of selective arteriography in determining the site of gastrointestinal blood loss has been reported repeatedly.[1-5] It has been successful when barium studies have failed to reveal a lesion, both in acute[6] and chronic[7] or recurrent blood loss from the gut. Positive results have been obtained in children[7, 8] as well as in adults, and precious surgical time has been saved in critical situations with more than 1 potential bleeding site.[9] This case report presents angiographic demonstration of a bleeding lesion which on surgical exploration was proven to be a benign, ulcerated leiomyoma in the third part of the duodenum.

Report of Case

This 64-year-old white man had repeated hospital admissions for chronic alcoholism and gastrointestinal bleeding. Previous findings included hepatomegaly, jaundice, edema, ascites, abnormal liver-function chemistries, actual or impending delirium tremens, or just inability to care for himself following alcoholic binges. Gastrointestinal bleeding usually occurred in this setting, manifested by hematemesis and/or melena. Only once did he require transfusion of 2 units of whole blood. At least 8 upper gastrointestinal X-ray examinations had been normal. Esophagogastroscopy done twice during active bleeding revealed erosive gastritis on one occasion and was normal in the other. Esophageal varices were not seen radiographically or endoscopically at any time.

After a 3-month period of alcoholic abstinence the patient passed a large reddish melenic stool, after which he fainted. He entered the hospital acutely ill, tremulous, and diaphoretic with weak pulses and cold extremities. The liver and spleen were not enlarged, and jaundice or ascites were not present. The rectum was covered with dark red blood.

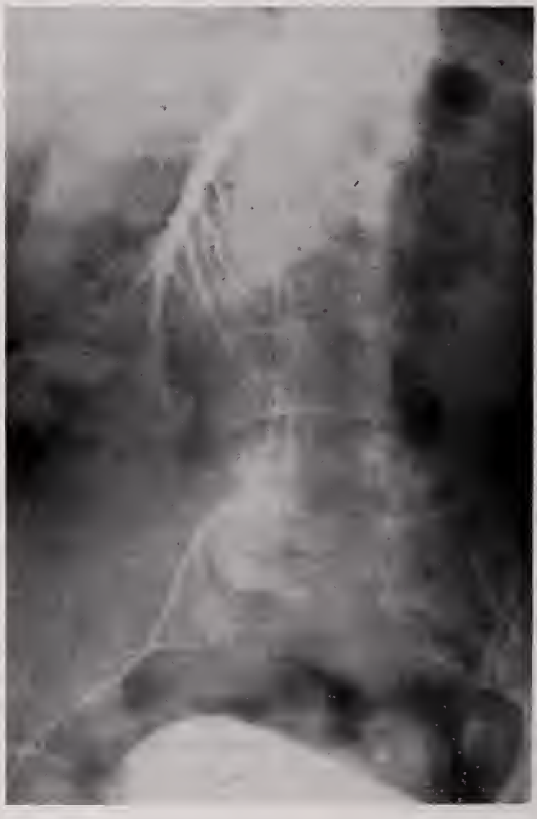

FIG. 1. Selective injection into superior mesenteric artery, demonstrating early filling of main trunk and its branches.

The admission hematocrit was 27 per cent. Coagulation studies were normal. Nasogastric intubation produced clear aspirates on 2 occasions. Sigmoidoscopic examination was normal to 25 cm., with dark red blood seen to flow from above. An upper gastrointestinal series was normal. Dark red blood continued to pass per rectum, and after 9 units of whole blood and 2 units of packed red blood cells the hematocrit was 22 per cent. At this time selective angiography via the femoral route was done with successful injections into the celiac axis and superior mesenteric artery. The inferior mesenteric orifice could not be entered successfully even though the midstream aortogram showed its presence. Spillage of contrast material was noted to occur from a branch of the superior mesentery somewhere in the right midabdomen in a spot overlying the right iliac crest (figures 1, 2 and 3).

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* Assistant Chief of Gastroenterology, Walter Reed General Hospital, Washington, D. C. 20012.

† Radiology Staff, Tripler General Hospital, Moanalua, Hawaii; formerly on the Radiology Service of Walter Reed General Hospital.

‡ Chief of Head and Neck Surgery, Walter Reed General Hospital.

The actual point of spillage along the gut was difficult to determine precisely. Most observers thought the site was somewhere in the proximal transverse colon because of the configuration of colonic gas in relation to the spilled contrast medium. A barium enema revealed an entirely normal barium-filled colon. Less optimal evacuation films failed also to reveal a lesion in the large bowel. Barium was then given orally in small quantity and followed for a short while as it traversed the small bowel, and again no lesion could be outlined, at least to the midjejunum. After 2 additional units of blood, laparotomy was performed. A soft, rubbery, 2 by 2½ cm. mass in the wall of the third portion of the duodenum was found and removed. On cut section a hemorrhagic, ulcerated center was noted (figure 4). No similar lesions were noted on careful examination of the small and large bowels. Histologic examination showed a benign leiomyoma (figure 5).

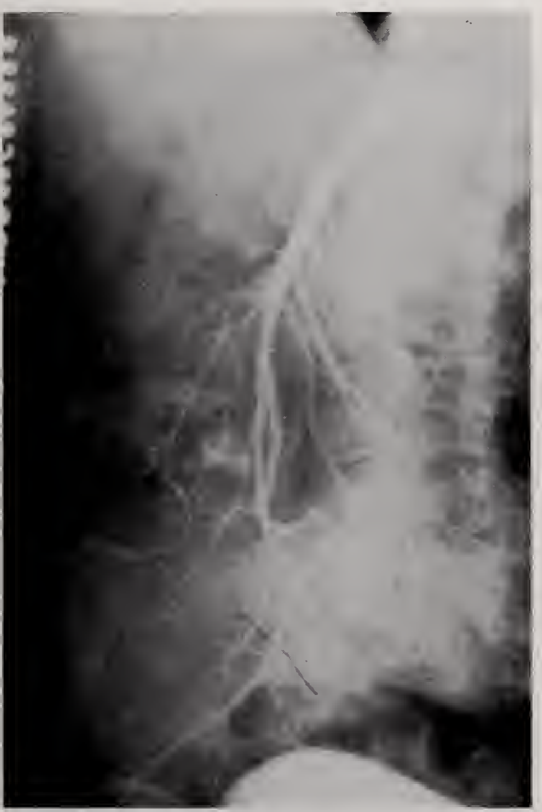

FIG. 2. Midarterial phase film. Spillage of contrast has occurred in the right midabdomen just below the medial aspect of the right iliac crest.

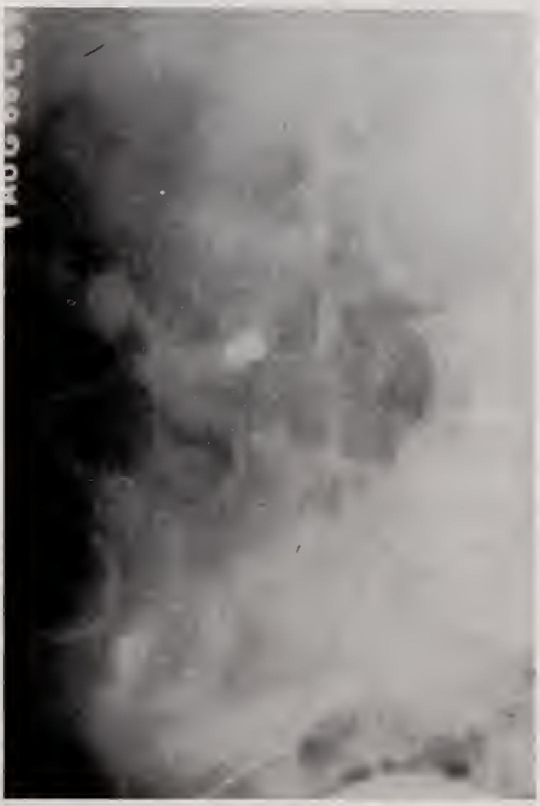

FIG. 3. Late phase film showing a persistent, small puddle of contrast material left behind after all intravascular dye has cleared.

Discussion

Smooth muscle tumors of the duodenum are rare.[10] A preoperative clinical diagnosis is rarely forthcoming, and therefore successful surgical resections are reported only occasionally.[11, 12] Gastrointestinal hemorrhage, their most common clinical manifestation, can be acute or chronic.[13, 14, 15] More often than not the smooth filling defect in the barium-filled duodenum is not picked up radiographically.[16] In the present case several previous upper gastrointestinal series as well as 2 additional barium studies during massive bleeding failed to demonstrate the lesion. Angiography has been successful in detecting leiomyomata of the small bowel. Boijsen[7] reported 2 in the jejunum and 1 in the ileum demonstrated via selective injections of the superior mesenteric artery after several barium examinations were negative. One additional earlier case reported by the same author was discovered in the jejunum on small-bowel barium study and was confirmed by angiography.

The choice of diagnostic procedures for the gastrointestinal bleeder now includes barium studies, endoscopy, angiography, string test, and perhaps scanning of the abdomen after intravenous injection of radioisotopic material. Obviously one looks for the procedure with the highest diagnostic yield to be done sooner if possible. Thus, the order in which one selects diagnostic procedures depends on the patient's condition, evidence of continued bleeding, training and experience, available facilities, and to a great extent the enthusiasm directed toward one procedure or the other by the hospital staff. In a given instance barium study, endoscopy, or angiography can identify a possible bleeding lesion, but only endoscopy or angiography can demonstrate it as the actual source of bleeding.

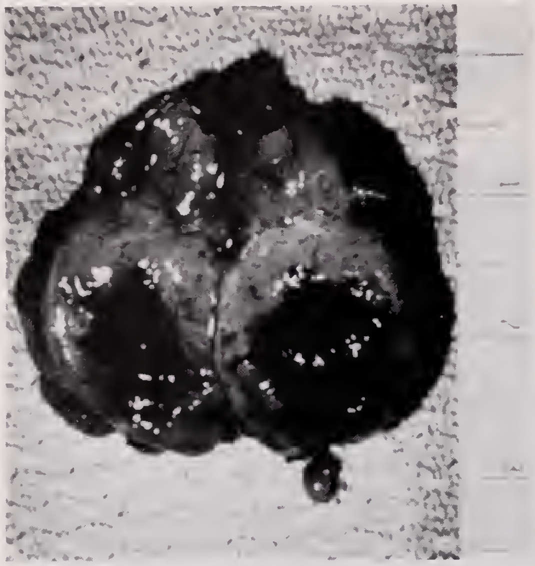

FIG. 4. Specimen sliced in half showing its hemorrhagic ulcerated center.

Peroral endoscopy reveals bleeding sites within the esophagus and stomach and usually indicates duodenal bleeding when transpyloric reflux of blood is present. At the other end proctoscopy shows lesions within the distal 25 cm. of the colon and rectum and indicates more proximal lesions when fresh bleeding seems to come from higher than the tip of the sigmoidoscope. Thus, from the proximal duodenum to the sigmoid the identification of potential bleeding lesions is exclusively in the hands of the radiologist via the use of intraluminal barium and/or angiography. Again, in this area only angiography can demonstrate any lesion to be the actual site of bleeding by demonstrating intraluminal spillage of dye.

The advocates of selective angiography propose it as the initial study to be undertaken in a patient with gastrointestinal bleeding, particularly if blood loss is occurring briskly when the chances of spillage of contrast are greater. Certainly, to do angiography after bleeding has slowed down or ceased decreases accuracy and diagnostic usefulness. The same applies to endoscopy during active bleeding. Given an active bleeder with blood recoverable on nasogastric intubation endoscopy after lavage is preferred as the initial study. Not only can the bleeding point be identified, but valuable information about the characteristics of the lesion itself can be obtained along with high-quality photographs for permanent record. Direct vision biopsy with the more recently available flexible instruments is also possible. When intubation reveals absence of blood in the stomach aspirate, angiography is preferred, followed by intraluminal barium study.

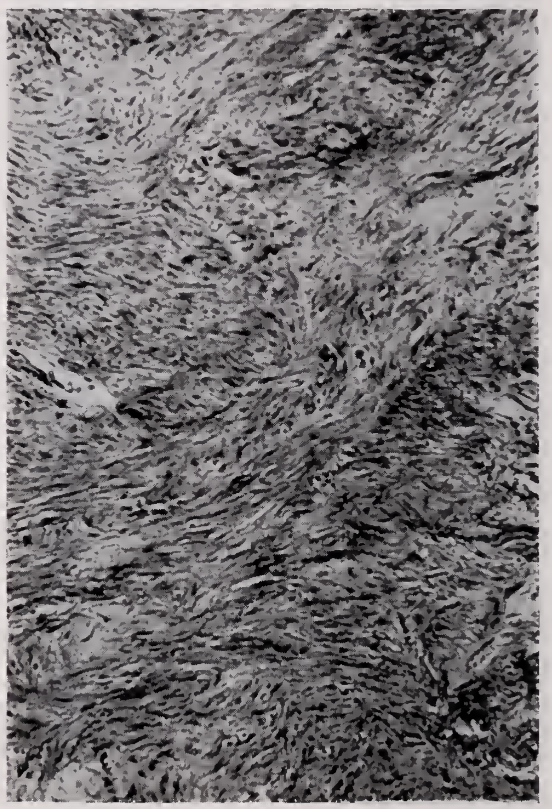

FIG. 5. Representative section of the specimen's histology featuring whorls of multidirectional smooth muscle fibers.

Summary

Selective angiography of the superior mesenteric artery demonstrated a bleeding lesion which on surgical exploration was found to be a benign, ulcerated leiomyoma of the third portion of the duodenum. Several previous upper gastrointestinal X-ray examinations as well as 2 additional barium studies done during active massive bleeding had failed to demonstrate the lesion.

(Continued on page 476)

Coronary Arteriography*

HARVEY G. KEMP, M.D.,† AND RICHARD GORLIN, M.D., F.A.C.P.‡

Opacification of the coronary vascular system by contrast material during cardiac catheterization has had an enormous impact on our knowledge of coronary heart disease. It has allowed us with surprising safety to define precisely the anatomic extent of coronary atherosclerosis. Added impetus has been given to coronary arteriography by new directions in therapy. For example, there is accumulating evidence that surgical revascularization of the myocardium is not only feasible but beneficial. The normal course of a recently developed diagnostic procedure, like a new drug, is to oscillate between crests of overenthusiasm and nadirs of total rejection. Now, after some 10 years, it is useful to reassess the place of coronary arteriography in the diagnostic armamentarium.

Because this article is intended to give a general view of the field to the practicing internist, surgeon, and general practitioner, relatively little attention will be given to the technical details of obtaining high-quality coronary arteriography. It should be stressed, however, that only high-quality studies provide the accurate information which justifies exposing the patient to the potential hazards of the procedure.

The 2 methods which have received widest application are the retrograde approach from the right brachial artery and the percutaneous retrograde approach from the femoral artery with the use of a preformed catheter. In experienced hands either of these methods can yield excellent selective studies at low risk to the patient.

The decision to perform coronary arteriography should be based upon the weighing of the benefits expected to accrue from the resulting information as opposed to the potential hazards involved. The latter have recently been evaluated in a coöperative study of 16 laboratories. A total of 3,312 studies performed on 3,264 patients were included in the study group. Sixty-six complications occurred in 62 patients, for an overall complication rate of 1.9 per cent. Cardiac complications occurred in 10: myocardial infarction in 5, coronary insufficiency in 4, and dissection of a coronary arterial wall without myocardial infarction in 1. Death occurred in 2 of the 5 patients sustaining a myocardial infarction. One of these patients had an aortic-valve replacement with a Starr-Edwards prosthesis, and the infarction was secondary to coronary embolism. An additional death occurred in a patient with combined coronary heart disease and aortic stenosis, yielding an overall mortality rate of less than 0.1 per cent. Ventricular fibrillation occurred in 27 patients. This was found to be a more frequent complication in women and occurred oftener after injection of the right than the left coronary artery. In each instance the patient recovered without sequelae, indicating the relatively innocuous nature of this arrhythmia when well-trained personnel and adequate resuscitative equipment are available. Thrombosis of the brachial artery occurred in 10 patients, but in our experience this probably underestimates this complication. Fortunately, if the brachial artery remains patent above the antecubital space, symptoms are slight and transient, and surgical repair is not necessary. However, surgical intervention has been necessary in about 0.5 per cent (2 of over 400) patients in our experience. In both instances surgery restored the patency of the brachial artery.

It seems reasonable to conclude from available data that the risk of death from coronary arteriography is related to the severity of the coronary heart disease and that significant aortic stenosis or prosthetic replacement of the aortic valve add to that risk. On the other hand, the vast majority of patients undergoing this procedure have extensive coronary disease and withstand the arteriographic study with no complication at all.

It is somewhat easier to quantify the potential hazards associated with coronary arteriography than to assess the potential benefit to the individual patient obtained from the information yielded by the procedure.

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† Junior Associate in Medicine, Peter Bent Brigham Hospital, Boston, Mass. 02115; Instructor in Medicine, Harvard Medical School.

‡ Chief, Cardiovascular Division, and Physician, Peter Bent Brigham Hospital; Associate Professor of Medicine, Harvard Medical School; Investigator, Howard Hughes Medical Institute; office: 721 Huntington Avenue, Boston, Mass. 02115.

It is safe to generalize that the physician caring for a patient is always better equipped to do so when his knowledge of the patient's condition is extended. This is particularly true of diseases in which there is relatively poor correlation between symptoms, indirect measurements, and the extent of anatomic disease. In this regard several specific observations about coronary heart disease have emphasized the usefulness of arteriography. Studies based solely on autopsy material have shown an excellent correlation between a clinical history of angina pectoris and extensive coronary atherosclerosis. Since the advent of coronary arteriography, however, a group of patients have emerged with angina pectoris but whose major coronary arteries are free of intraluminal obstruction. The incidence of this paradoxical syndrome has been consistently reported to be about 10 per cent of subjects referred to centers performing coronary arteriography because of angina pectoris. The etiology of angina in this group remains obscure, but it would seem probable that the appropriate treatment and prognosis of this group will prove to be significantly different from their counterparts with arteriographically demonstrable coronary atherosclerosis. At present there are no methods other than arteriography to differentiate these 2 groups.

In addition to the unusual syndrome just described there are many patients with less typical histories, with nonspecific electrocardiographic abnormalities, with unexplained congestive heart failure, arrhythmia or some combination of the above, in whom coronary heart disease is suspected but cannot be included or excluded on clinical grounds alone. An unknown, but certainly high, percentage of these patients will have normal coronary arteriograms, and treatment can be redirected either toward correction of whatever disease is found or, in the absence of demonstrable heart disease, toward psychologic rehabilitation. The amount of psychologic damage done to patients by well-intentioned physicians who have erroneously attached the label of coronary heart disease to some masquerading symptom-complex can neither be overestimated nor readily undone.

Perhaps the largest group of patients who merit coronary arteriographic studies includes those who have clearly established coronary heart disease associated with chest-pain syndromes not easily controlled by medical management. It is obvious that several value-judgments are called for in including the individual patient in this group and that probably no 2 observers would consistently evaluate the same patient in exactly the same fashion. Also, it is clear that, while the results of myocardial revascularization are being more precisely defined in terms of pain relief, objective signs of increased myocardial perfusion, and longevity, our criteria for study will continue to change. Although it is not within the scope of this report to critically evaluate the status of myocardial revascularization, the threshold for a decision to obtain arteriographic studies is inextricably related to one's evaluation of the benefits potentially available through surgical intervention. Addressing ourselves to this specific point, we believe that present data strongly indicate that not only can pain syndromes be substantially relieved by internal mammary-artery implantation, but that there is objective evidence of improved myocardial perfusion, and further that there is reason for optimism concerning improvement in longevity, particularly in patients surviving 18 months after the procedure. In addition, new revascularization procedures, particularly the direct replacement of segments of the right coronary artery with venous grafts, currently show promise. As surgical procedures have continued to evolve, young patients with myocardial infarction without pain or congestive heart failure have become legitimate subjects for arteriography, at least in centers where data concerning the effect of revascularization on longevity are being actively accrued and evaluated. For the present it seems unwise and overly conservative to allow patients to severely restrict their lives because of coronary heart disease, and this is particularly true of the young patient.

There are a number of miscellaneous indications for coronary arteriography. Patients with angina and aortic valve disease being considered for valvular replacement should certainly be studied, and probably patients with mitral valve disease as well. This enables the cardiologist to better understand total myocardial function and to make a more objective estimate of surgical risk and ultimate prognosis. It provides very helpful information for the surgeons who will be perfusing the coronaries at the time of surgery. Uncommon specific indications for coronary arteriography include suspected congenital malformations, luetic involvement of the coronary ostia, and coronary artery embolism.

To some degree the indication for adding selective coronary arteriography to any retrograde left-heart catheterization procedure performed on

(*Continued on page 476*)

Double-blind, Cross-over Study Comparing Chlordiazepoxide,* Conjugated Estrogens, Combined Chlordiazepoxide and Conjugated Estrogens,† and Placebo in Treatment of the Menopause

JOSEPH B. SHEFFERY, M.D., F.A.C.S.,‡ THOMAS A. WILSON, M.D.,§
AND JAMES C. WALSH, M.D.§

It is an unusual woman who is not aware of some perceptible change apart from amenorrhea during the transitional period of the menopause. For most women the decrease and cessation of ovarian function is a time of physiologic and emotional adjustment which creates varying degrees of stress. The transient menopausal symptoms usually are endured without treatment, and the few women who consult their physicians are often seeking relief for the accompanying emotional symptoms which may bring as much distress as those arising from hormonal imbalance.

Therapeutic methods, consisting of reassurance and explanation given in conjunction with tranquilizers or sedatives, may be sufficient for alleviating the mild symptoms of the menopause. When vasomotor and emotional symptoms are moderate to severe the administration of supplemental estrogens in conjunction with these measures generally affords marked or total relief. Opinions vary widely regarding how extensively and how long hormonal replacement therapy should be used. There is, however, a growing tendency among physicians to view the menopause not merely as a natural process of aging but as a state of estrogen-deficiency which can be successfully treated by replacement therapy.[1, 2]

In the present clinical trial a comparison was made of the effects on menopausal symptoms of a combination of chlordiazepoxide and water-soluble, conjugated estrogens, chlordiazepoxide alone, conjugated estrogens alone, and a placebo. The beneficial effects of short-term estrogen administration in menopausal women are well known. Chlordiazepoxide has been extensively used in the treatment of both medical and psychiatric disorders in which anxiety and tension are predominant symptoms. Several investigators[3, 4, 5] have used the drug in patients for the menopausal syndrome with good results, and we therefore decided to evaluate the effects of a combination of chlordiazepoxide and conjugated estrogens.

Materials and Methods

One hundred patients requiring treatment for the menopausal syndrome were included in this double-blind, cross-over study, the youngest being 27 years old and the oldest, 67. Predominant menopausal symptoms in this study group were flushes, anxiety, insomnia, and depression. Table 1 summarizes the severity of symptoms prior to therapy. In 8 patients, ranging in age from 27 to 52 years, menopausal symptoms had followed a previous bilateral salpingo-oöphorectomy.

Test medications were supplied in tablets, identical in appearance, containing either 5 mg. chlordiazepoxide, 0.2 mg. conjugated estrogens, a combination of these 2 agents, or a placebo. The drugs were administered in random order to 3 series of patients, each series receiving the drugs in a different cross-over fashion. After the study was terminated, the order of drug administration was revealed:

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* Available as Librum®, Roche Laboratories, Division of Hoffman-La Roche Inc., Nutley, N. J.

† Available as Menrium,® Roche Laboratories, Division of Hoffmann-La Roche Inc.

‡ Clinical Associate Professor of Obstetrics and Gynecology, Georgetown University School of Medicine; office: 730 24th Street, N.W., Washington, D. C. 20007.

§ Assistant Clinical Professor of Obstetrics and Gynecology, George Washington University School of Medicine; office: 730 24th Street, N.W., Washington, D. C. 20007.

Series 1 (30 patients)	Series 2 (32 patients)	Series 3 (38 patients)
chlordiazepoxide	chlordiazepoxide + conjugated estrogens	conjugated estrogens
↓	↓	↓
placebo	placebo	placebo
↓	↓	↓
chlordiazepoxide + conjugated estrogens	conjugated estrogens	chlordiazepoxide
↓	↓	↓
placebo	placebo	placebo
↓	↓	↓
conjugated estrogens	chlordiazepoxide	chlordiazepoxide + conjugated estrogens

All medications were prescribed for 21 days followed by a 9-day drug-free interval (this constituted 1 treatment month) at a dosage of 1 tablet 3 times a day. Active medications were given for 2 consecutive treatment months with placebo given as a "wash-out" for 1 treatment month between medications.

The severity of symptoms was rated by us as either none, mild, moderate, or severe during each treatment month. The symptoms appraised included anxiety, flushes, insomnia, depression, headaches, vertigo, palpitations, gastrointestinal manifestations, and miscellaneous somatic complaints, e.g., aches and pains. The ratings of severity were analyzed statistically. (The analysis used was a least-squares generalization based on the same linear model commonly used for the analysis of the Latin Square Design.)

At the end of the study we selected the drug which provided the most effective overall relief of menopausal symptoms in each patient.

Laboratory studies consisting of hematocrit determinations and urinalyses were performed before and after the study was completed in 91 patients. Vaginal smears were studied before and after the trial in 97 patients; pretherapy smears revealed an estrogen deficiency which was mild in 1 patient, moderate in 10, marked in 42, and very marked in 44 patients.

Results

Table 1 summarizes the ratings of severity of symptoms given before and after treatment with the active medications. Due to lack of follow-up or side-effects (see below), ratings were not given for chlordiazepoxide in 3 patients, for the conjugated estrogens in 4, and for the combined medication in 5 patients.

Statistical analysis of the ratings of severity of symptoms revealed that the combined medication was significantly more effective than the conjugated estrogens in relieving the symptoms of anxiety ($P < 0.001$), insomnia ($P < 0.02$), and vertigo ($P < 0.05$), and also significantly more effective than chlordiazepoxide in relieving insomnia ($P < 0.02$). Compared to the conjugated estrogens, chlordiazepoxide was significantly more effective in reducing anxiety ($P < 0.05$). Both the combined medication and the conjugated estrogens were significantly more effective ($P < 0.001$) than chlordiazepoxide in reducing the frequency and severity of flushes.

We rated as the most effective medication the chlordiazepoxide and estrogen combination in 56 patients, the conjugated estrogens in 2, chlordiazepoxide in 2, and placebo in 2. All the active medications were rated as equally effective (good or excellent) in 10 patients. In 3 of these the active drugs were rated more effective than placebo, and in 7, just as effective as placebo. Both the combined medication and the estrogens were rated equally as "more effective than the other test drugs" in 17 patients. In 1 patient this rating was given for the combined medication and placebo. In 7 patients there was no improvement with any compound. An evaluation of the most effective medication could not be made in 3 patients in Series 1 who were not followed up after the third treatment month.

Side-effects were reported by only 15 patients (table 2). Drowsiness was the most common complaint, occurring in 10 patients who received chlordiazepoxide, in 6 given the combined medication, and in 1 given the conjugated estrogens. Therapy was discontinued in 3 patients receiving chlordiazepoxide, in 2 because of daytime drowsiness and in 1 because of daytime drowsiness and nightmares. Medication was also discontinued in 2 patients on the combined medication because of drowsiness, in 1 on conjugated estrogens because of drowsiness and "heaviness

TABLE 1: Summary of Symptom-severity in Patients in Series 1, 2 and 3

Symptom	Treatment	Severity (No. Patients)			
		None	Mild	Moderate	Severe
Anxiety	Before treatment	13	27	38	22
	Chlordiazepoxide	57	27	10	3
	Conjugated estrogens (ce)	43	30	20	3
	Chlordiazepoxide + ce	77	15	2	1
Flushes	Before treatment	—	—	31	69
	Chlordiazepoxide	20	20	31	26
	Conjugated estrogens (ce)	72	10	8	6
	Chlordiazepoxide + ce	75	10	7	3
Insomnia	Before treatment	30	25	31	14
	Chlordiazepoxide	66	22	7	2
	Conjugated estrogens (ce)	63	16	17	—
	Chlordiazepoxide + ce	87	8	—	—
Depression	Before treatment	36	24	26	14
	Chlordiazepoxide	75	15	6	1
	Conjugated estrogens (ce)	67	19	8	2
	Chlordiazepoxide + ce	85	8	1	1
Headaches	Before treatment	48	25	22	5
	Chlordiazepoxide	71	19	7	—
	Conjugated estrogens (ce)	69	22	4	1
	Chlordiazepoxide + ce	88	4	3	—
Vertigo	Before treatment	61	26	12	1
	Chlordiazepoxide	80	14	2	1
	Conjugated estrogens (ce)	80	13	1	2
	Chlordiazepoxide + ce	89	6	—	—
Palpitations	Before treatment	53	21	23	3
	Chlordiazepoxide	76	16	4	1
	Conjugated estrogens (ce)	80	11	4	1
	Chlordiazepoxide + ce	87	6	2	—
GI manifestations	Before treatment	78	12	9	1
	Chlordiazepoxide	87	9	1	—
	Conjugated estrogens (ce)	89	6	—	—
	Chlordiazepoxide + ce	90	5	—	—
Miscellaneous somatic complaints	Before treatment	83	14	2	1
	Chlordiazepoxide	87	7	3	—
	Conjugated estrogens (ce)	90	5	1	—
	Chlordiazepoxide + ce	90	4	1	—

TABLE 2: Frequency of Side-effects Reported on Each Medication

Side-effect	5 mg. chlordiazepoxide	0.2 mg. conjugated estrogens + 5 mg. chlordiazepoxide	0.2 mg. conjugated estestrogens	Placebo
	Times Reported	Times Reported	Times Reported	Times Reported
Nightmares	1	—	—	—
"Sick all over," sore throat	1	—	—	—
Drowsiness	10	6	1	—
Rash	1	—	—	1
Breast engorgement	—	1	—	—
Tender nipples	—	1	1	—
Edema (legs, feet)	—	—	1	—
Headaches	—	—	1	—
"Heaviness in chest"	—	—	1	—
Acne	—	—	—	1
Blurring of vision	—	—	—	1
Constipation	—	—	—	1
TOTALS	13*	8	5*	4*

* More than 1 side-effect reported for some patients.

in the chest," and in 1 on placebo who reported acne and constipation as side-effects.

Blood and urine examinations revealed no abnormalities related to drug administration in any patient. A comparison of the vaginal smears taken before and after the study in 97 patients showed some increase in estrogenicity at the end of the trial in 87 patients and no change in 10. Post-therapy vaginal smears were normal in 51 patients. Estrogen deficiency was mild in 8 patients, moderate in 21, marked in 15, and very marked in 2.

Discussion

The combination of chlordiazepoxide plus conjugated estrogens at the dosages employed in the present study appears to be a satisfactory medication for treatment of the patient with moderate to severe menopausal symptoms. Side-effects were minimal and, of the drugs tested, the combined medication provided the most effective symptomatic relief.

The importance of treating both emotional and vasomotor symptoms in the menopause is evident from the results of this study. While vasomotor symptoms, particularly when mild, may seem to worry a patient less when tranquilizing medication is prescribed, estrogens are the indicated treatment for the relief of hot flushes. As expected, the compounds containing estrogens in the present study were significantly more effective than chlordiazepoxide in reducing the symptoms of hormonal imbalance. Moderate-to-severe insomnia was a frequent complaint of patients prior to the study. The combined medication was significantly more effective in relieving this symptom than either chlordiazepoxide or estrogens alone, indicating that both anxiety and vasomotor symptoms were contributing to the patients' insomnia.

The distressing symptoms of the menopause often occur at a time when a woman's role in life has changed. Her children are often grown and living away from home or interested in activities outside the family circle, and her husband is occupied with his business or profession. This situation often increases a woman's anxiety, and her emotional problems can be magnified by erroneous ideas she may have concerning the nature of the menopause. It follows, therefore, that in addition to treatment of the specific symptoms of the menopause with estrogens and tranquilizers, an important part of therapy is a clear explanation of the nature of the menopause and the willingness of the patient's physician to discuss her fears and problems with sympathy and reassurance.

Summary

One hundred patients requiring treatment for the menopausal syndrome were included in a double-blind, cross-over study designed to compare the therapeutic effects of the following medications: 5 mg. chlordiazepoxide, 0.2 mg. conjugated estrogens, a combination of these drugs, and a placebo. All were contained in tablets that appeared identical, and the dosage was the same for each—1 tablet 3 times daily.

Statistical analysis of the data revealed that the combined medication was significantly more effective than the conjugated estrogens in relieving symptoms of anxiety ($P < 0.001$), insomnia ($P < 0.02$), and vertigo ($P < 0.05$), and was also significantly more effective than chlordiazepoxide in reducing insomnia ($P < 0.02$). Both the combined medication and the conjugated estrogens alone were significantly more effective ($P < 0.001$) than chlordiazepoxide in reducing the severity and frequency of flushes.

In comparing the overall effectiveness of each of the medications in relieving menopausal symptoms we rated the chlordiazepoxide-estrogen combination as the most effective drug in 56 patients.

Side-effects occurred occasionally with all medications as well as with placebo. Drowsiness was reported most frequently, occurring in 10 patients who received chlordiazepoxide, in 5 given the combined medication, and in 1 who received the conjugated estrogens. Results of blood and urine studies revealed no abnormalities related to drug administration. Vaginal smears studied in 97 patients before and after the study was completed showed some increase in estrogenicity in 87 patients and no change in 10.

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Role of Psychotropic Therapy in Estrogen-deficient Menopausal Patients

HARRY S. DOUGLAS, M.D.*

EMOTIONAL TONE and stability in the female are maintained largely by continuation of normal output and balance of ovarian hormones. At the onset of menarche a youngster is beset with unrest, irritability, fluctuating moods, and unexplained urges that baffle and upset her. She will face up to her problems more easily if her mother or an older sister enlightens her; she may remain frightened and bewildered if no adequate explanations are forthcoming. Usually the transition to puberty is managed without great difficulty, if hormone balance is established quickly. Frequently ovarian hormone equilibrium may not be readily attained and imbalance may proceed into the teens, when its manifestations are premenstrual tension, dysmenorrhea, and other menstrual irregularities. The addition of oral progesterone premenstrually serves to balance excessive estrogen in some cases. In underdeveloped girls both estrogen and progesterone are needed to restore good uterine response and emotional balance.

During pregnancy and after delivery there may be hormonal imbalance associated with fatigue, depression, irritability, insomnia, crying spells, and even suicidal thoughts. The overabundance of hormones during pregnancy followed by a sudden lowering of hormonal levels after delivery frequently is manifest as the "3-day blues," a mild postpartum depression which may persist and intensify beyond this period.

The onset of menopausal symptoms is a signal of diminishing ovarian hormone output. The first level of change occurs with the highly specialized secretion of progesterone. Later there is a reduction of estrogen as well. These are gradual processes accompanied by slowly developing symptoms, but in the menopause that is surgically induced by ablation of the ovaries the sudden withdrawal of ovarian hormones produces an especially pronounced syndrome of nervous and emotional instability. While hot flashes are generally considered the significant symptom, developments such as depression, anxiety, irritability, insomnia, nervousness, and crying spells are equally important considerations and often require treatment beyond simple hormone replacement. Thus, the many women burdened by considerable emotional aggravation may be much more adequately served when a suitable tranquilizer in appropriate doses is added to the therapeutic regimen of estrogen replacement.

The objective of the study to be described was determination of the extent to which addition of a tranquilizer to the therapeutic regimen of women in menopause would enhance expected response to estrogens.

Materials and Methods

The study was conducted in the orthodox double-blind manner, with completely randomized coding and assignment of materials. Inclusion in the study was predicated on the presence of symptoms and signs of the menopause, undifferentiated as to etiology, onset, type or severity of symptoms, or previous therapy. The coded, identically appearing medications were tablets of conjugated estrogens, equine, 0.4 mg., and tablets containing combined conjugated estrogens, equine, 0.4 mg. plus meprobamate† 200 mg.

There were 50 patients, 25 in the estrogens group and 25 in the estrogens plus meprobamate group. The time lapse since the onset of menopause (surgical in 16 patients and natural in 34) varied widely, ranging between 1 month and 12 years (median, 1 year). Only 13 of the 50 patients had received prior hormonal therapy. Abnormal findings, other than the typical menopausal symptoms, were absent in 29 of the patients. Disorders in the other 21 patients included mastitis, edema, endometriosis, fibrosis, hypertension, obesity, hypothyroidism, and asthma.

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* Address: 2141 K Street, N.W., Washington, D. C. 20037.

† Produced commercially as Milprem, a product of Wallace Pharmaceuticals, Cranbury, N. J.

All had emotional disturbance in varying degree, all but 1 had a number of vasomotor complaints, and all but 5 reported miscellaneous somatic complaints such as headache or other less defined pains.

In essence, this group of patients should be considered rather typical of any population of women in the menopause whose symptoms are troublesome enough to cause them to seek medical therapy.

Results

After the study was completed and the code broken by a consulting statistician the groups were compared for initial characteristics to verify the validity of the randomization procedure. Criteria for which baseline data obtained were examined statistically and found not to be meaningfully different among the groups were age, onset, type of menopause, and previous therapy (table 1).

TABLE 1: Group Characteristics

	Estrogens 0.4 mg. (n = 25) + Meprobamate 200 mg.	Estrogens 0.4 mg. only (n = 25)
Age:		
Mean	43.9 yrs.	45.6 yrs.
Median	43	44.5
Range	32–55	36–54
Onset of menopause:		
Mean	2.3 yrs.	2.1 yrs.
Median	1	0.75
Range	0.25–8	0.1–12
Type of menopause:		
Natural	17	17
Surgical	8	8
Previous therapy:		
None	19	18
Estrogen	1	2
Estrogen and tranquilizer	4	
Progesterone	1	1
Sedatives		1
"Hormones"		2
"Shots"		1
Dosage (tablets):		
b.i.d.	4	2
t.i.d.	20	23
q.i.d.	1	
Duration of study (weeks):		
Mean	4.9	5.8
Median	4	4
Range	2–17	2–25

The period of observation was 1 month or a few days less if the woman began to menstruate, an indication for discontinuation of medication. Thus 47 patients remained in the study for at least 3 to 5 weeks. The other 3, 2 in the group receiving estrogens only, left the study after 2 weeks because of inadequate response.

The customary dosage schedule of patients in both groups was 1 tablet 3 times a day, i.e., either 1.2 mg. estrogens alone or 1.2 mg. estrogens plus 600 mg. meprobamate daily. This dosage held for 43 of the 50 patients, the other 7 having been maintained on either 2 or 4 tablets a day. Of the 50 women, 37 required no adjunctive medication of any kind; concomitant therapy for the remaining 13 was limited to nonrelated drugs such as anorexiants and analgesics.

A rating checklist containing 14 of the most common symptoms of the menopause was prepared for grading of these patients' responses. Included were symptoms representative of the vasomotor, somatic, and anxiety-related emotional types. Those occurring in at least 15 patients of each group were hot flashes, dizziness, and sweating in the vasomotor category; headache, in that area classified as somatic; and anxiety, depression, fatigability, and insomnia in the group comprised of anxiety-related emotional complaints.

The patients were not selected on the basis of prominence of one or another category of symptoms, because this population was supposed to represent a rather general cross-section of women who require therapy for menopausal symptoms. Thus it was expected at the outset that estrogens alone would considerably help most if not all of these patients. This anticipation was generally realized, except that, on the average, those patients who received meprobamate in addition to estrogens fared perceptibly better in important respects (table 2). For the treatment of vasomotor symptoms the combination showed only slight advantage over the hormone alone (93 per cent reduction in severity versus 85 per cent); for somatic complaints there was no difference (approximately 72 per cent relief in each group).

Emotional symptoms, especially anxiety and depression, showed a decidedly more pronounced response in those patients receiving the combined meprobamate plus estrogens tablet. The initial severity scores of anxiety and depression in the patients of the latter group each was reduced by a clinically noteworthy 82 per cent, contrasted to relief of 52 per cent for anxiety and 56 per cent for depression in the estrogens alone group. Total severity reduction for all anxiety-related emotional symptoms was 64 per cent in the group of patients receiving estrogens alone and 82 per cent in the group receiving the tranquilizer in addition.

TABLE 2: Symptomatic Response to Therapy

Symptom	Estrogens + Meprobamate				Estrogens Only			
	No. Patients	Initial Severity*	Final Severity*	Per cent Change	No. Patients	Initial Severity*	Final Severity*	Per cent Change
Hot flashes	21	78	6	92	21	80	7	91
Sweating	19	66	4	94	22	77	12	84
Dizziness	17	58	6	90	17	50	8	84
Palpitation	12	40	1	98	17	49	11	78
Vertigo	5	15	0	100	9	23	4	83
Total vasomotor	24	257	17	93	25	279	42	85
Headache	21	66	13	80	21	60	15	75
Vague pains	13	37	13	65	16	46	9	80
Arthropathies	6	16	7	56	3	10	8	20
Total somatic	22	119	33	72	23	116	32	72
Anxiety	25	93	17	82	22	77	37	52
Depression	22	82	15	82	23	84	37	56
Fatigability	22	81	15	81	22	81	21	74
Insomnia	19	62	7	89	23	73	16	78
Memory disturbance	10	27	7	74	13	39	15	62
Perception disturbance	5	13	3	77	4	14	6	57
Total anxiety-related emotional	25	358	64	82	25	368	132	64
All symptoms	25	734	114	84	25	763	206	73

* Total severity score for all patients with each symptom. Severity rated on a 0 to 4 scale.

There were no adverse reactions of any kind in either group, which will be further elaborated. When all factors were considered the patients of each group were evaluated (still double-blind) for overall response, that is, taking into consideration the many intangibles which are so hard to codify objectively. It was judged that marked to complete relief had been demonstrated by 22 of the 25 patients (88 per cent) in the estrogens plus meprobamate group and by 17 of the 25 patients (68 per cent) in the estrogens-alone group. One patient in the former and 2 in the latter group did not respond to any appreciable extent. The few remaining patients obtained relief of intermediate degree.

Comment

The phenomenon that has been labeled "menopause" is finally receiving the attention it has long merited. Rhoades[1] has aptly noted, "It is only during the medical careers of the majority of physicians practicing today that women have lived long enough past the menopause to present a medical problem that clamors for a solution."

Now we are studying the condition more carefully, learning of its many vagaries and complexities. The profile of the woman in menopause has been much more clearly delineated, and many changes previously overlooked or misinterpreted today are taken as clear signs of the climacteric. Several recent articles have presented carefully organized descriptions of the myriad physiologic changes that accompany menopause and affect almost all organ systems.[1, 2]

As it should be, the preconceived notions of treatment (or nontreatment, as the case may be) are also being actively, at times hotly, disputed. Controversy has arisen over the need for ovarian hormone replacement. There is a school of thought that holds with Greenblatt,[3] Wilson,[4] and others,[5] for example, that signs of menopause are, in essence, automatic signals for estrogen-replacement therapy unless extenuating contraindications intervene. In the past many authorities had maintained that supplemental estrogens should be avoided when possible,[6] although this position was gradually replaced by the more temperate view that estrogen therapy should neither be routinely administered nor generally excluded but instead reserved for those women who give clear evidence of estrogen requirement.[7]

I have observed that a genuine need for estrogen replacement can be rather easily established by the experienced practitioner through the appearance of symptoms and confirmed by vaginal smears for estrogen counts. In this connection it is noteworthy that 37 of the 50 patients in this study formerly had not received any treatment aimed at the menopause, despite the fact that all but 7 claimed to have had symptoms for at least 6 months, with 23 reporting disturbances for the previous 1 to 3 years. Such case histories may appear to represent examples of patients' self-neglect, but this is not generally true. More often than not the complaints are treated for a considerable period as psychosomatic rather than menopausal in origin. It is well to remember that true indications of menopause may intrude and must be treated at an earlier age than that which is generally considered "average."

Once the need for estrogens has been established the physician must decide if the particular array of symptoms is of the type which will respond to hormones alone. Often, estrogen supplementation will evoke remarkably rapid response, but it has been my observation that approximately 1 out of every 3 women with natural menopause who require estrogens and 100 per cent of the surgical castrates need some form of psychotropic medication in addition to the hormone.

Surgical menopause is obviously a situation fraught with physiologic trauma and potentially devastating psychologic effects. It is usually the younger woman who abruptly becomes a candidate for surgery. The woman who has just undergone hysterectomy has become a very different creature, or at least she thinks she has. The deep depression and intense anxiety regarding her future femininity, expressions of fears of sexual failure, and, if she is relatively young, the understandable ambivalence toward loss of childbearing potential must receive sympathetic attention and must be assuaged medically. In contrast, naturally occurring menopause is a much more insidious phenomenon, starting usually between the ages of 40 and 42 when ovarian hormone output begins to fail and progressing slowly over the next several years. In the meantime the adrenal glands take up some of the slack as the body attempts to reëstablish equilibrium. In the surgical patient there is no opportunity for the adrenals to perform their compensatory functions, and vasomotor and emotional symptoms are severe at the outset. Immediate treatment with estrogens and tranquilizers supplies the external means to a less disturbing transition.

In this regard it should be noted that 8 women with surgically induced menopause were in each of the drug groups formed in this study. All 8 responded with marked to complete relief in the group treated with estrogens plus meprobamate, but only 4 of the 8 in the group on estrogens only responded in similar fashion. While admittedly this is too small a base from which to draw finite conclusions, the preliminary findings appear to support the need for consideration of addition of psychotropic therapy to the treatment programs for such women. Additional work on the evaluation of combined estrogens-meprobamate in a much larger series of women with surgically created menopause is now in progress.

There has been surprisingly little discussion, especially in the recent and current literature, of the desirability of adding tranquilizers to the therapeutic regimen of such women. Several earlier publications cite the favorable adjunctive use of meprobamate in the treatment of symptoms associated with the menopause.[8, 9] Of late, however, the enormous amount of attention directed toward the role of hormone supplementation has obscured other needs of the menopausal woman. This study has demonstrated that strong emotional reactions to the menopause will respond only partially to estrogens, and a review of other clinical studies reveals a preponderance of supporting documentation. Kaufman,[10] for example, found that emotional symptoms were relieved in only 50 per cent of the 200 patients receiving estrogens, the remaining patients requiring supplementary psychotropic medication or psychotherapy. The only symptoms, of a total of 46 separate complaints, invariably relieved solely by estrogens were hot flashes, associated sweating, and vaginal irritation due to local atrophy. Rhoades,[1] too, in his double-blind study of 142 menopausal women taking estrogens, obtained 100 per cent relief of hot flashes but only 63 and 64 per cent relief of insomnia and depression respectively.

These reports correlate very well with those of the present study, in which estrogens alone afforded 91 per cent relief of hot flashes but only 52 and 56 per cent relief of anxiety and depression. With the addition of meprobamate the hot flushes responded as well (92 per cent), and an additional 25 per cent relief (over that seen in the other group) of the emotional symptoms was obtained concurrently.

It does not require substantial doses of meprobamate to accomplish this purpose. The smaller of the 2 available dosage combination forms (meprobamate 200 mg. plus conjugated equine estrogens 0.4 mg.) was used in this study. The administration of 3 tablets a day (less in 4 patients) provided adequate therapeutic amounts of each component. By maintaining these dosage levels it was possible to achieve therapeutically satisfying results without any instance of adverse reaction. There is no reason to anticipate side-effects from administration of physiologically normal amounts of estrogens nor from effective but relatively low doses of meprobamate. Indeed, it has been shown that superior response in medical patients with prominent neurotic symptoms can be realized with daily doses of meprobamate as low as 400 to 600 mg.[11] In the latter double-blind study, response of anxiety, depression, and other neurotic symptoms to meprobamate was significant; moreover, there were substantially fewer side-effects associated with its use as compared to controls.

Summary and Conclusions

From a group of 50 typically menopausal women, 25 were assigned randomly to a group treated with 0.4 mg. of conjugated estrogens alone and 25 to a group given 0.4 mg. of conjugated estrogens plus 200 mg. of meprobamate in a compound tablet, each administered usually 3 times a day. The study was double-blind.

After an average of 1 month's therapy it was found that patients of both groups gave clear evidence of markedly favorable response. However, those in the group receiving meprobamate in addition to the hormone experienced greater clinical benefits in the relief of anxiety-related emotional symptoms, which were prominent in both groups. There were no side-effects, perhaps a direct consequence of the ability to obtain therapeutic success with relatively low doses of estrogens and meprobamate.

Response of the women with "surgical menopause," representing one-third of the total group, to the addition of the tranquilizer was especially rewarding. The probable explanation for this is that these women suffer abrupt physiologic and emotional trauma and need psychotropic medication to help them bridge the gap between surgery and eventual reëstablishment of hormonal balance. Further work along these lines is in progress.

Other studies, too, have shown that while vasomotor symptoms in menopausal women are almost completely relieved by estrogens, relief of the often associated emotional disturbance lags behind. It appears that with the current emphasis on need for ovarian hormone replacement therapy the frequent need of such women for additional tranquilization is being overlooked. A bifaceted therapeutic attack seems more appropriate in many cases.

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Patients Needed at Clinical Center

Hemolytic Anemia: The coöperation of physicians is requested in the referral of patients for studies of idiopathic auto-immune hemolytic anemia being conducted by the National Institute of Allergy and Infectious Diseases at the Clinical Center of the National Institutes of Health in Bethesda, Md.

Referral of patients with Coombs' positive idiopathic auto-immune hemolytic anemia are needed. Also, selected patients with secondary types of auto-immune hemolytic anemia, especially of the cold antibody type, will be accepted. Preference will be given to patients who have not received previous treatment.

Studies will be performed to determine the type of antibodies involved and the role of complement in hemolysis. Following this, patients in need of therapy will be treated, and experimental drugs may be used. All patients will be carefully followed during the course of the study. On completion of their studies patients will be returned to the care of the referring physician who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Michael M. Frank or Dr. John S. Sergent, Clinical Center, Room 11-N-104, National Institutes of Health, Besthesda, Md. 20014; telephone (301) 496-4964.

Insomnia and Narcolepsy: The coöperation of physicians is also requested in the referral of patients for studies of insomnia and narcolepsy being conducted by the Clinical Psychobiology Branch of the National Institute of Mental Health at the Clinical Center, National Institutes of Health.

Patients with chronic insomnia who are otherwise physically and mentally healthy will be admitted as inpatients. It is anticipated that they will be evaluated for a period of 30 nights. They will not be required to be there during the day. Patients with narcolepsy, particularly those with accompanying cataplexy, are also needed. Hospitalization of these patients will be arranged with the referring physician on an individual basis.

Physicians who wish to have their patients considered for this study may phone or write Dr. Richard J. Wyatt, Clinical Center, Room 4-S-223, National Institutes of Health, Besthesda, Md. 20014; telephone (301) 496-6886.

Clinicopathologic Conference

Fever, Tachycardia and Goiter

CHANDLER SMITH, M.D., EDITOR*

THE FOLLOWING CASE REPORT was presented for discussion at the biweekly Clinicopathologic Conference held at George Washington University Hospital, December 3, 1968.

The patient was a Negro woman, 46 years old, who was admitted to the hospital because of fever, joint pain, and vomiting. She had been well until 1 week previously when fever and sore throat developed. Shortly later there were lassitude, weakness, and severe aching of the legs. Two days before admission arthralgias of the shoulders, wrists, knees, and ankles were noted, and on the day of admission vomiting began. She had not taken food or water on the day of admission, the vomitus was not described, and the joint pain was not associated with redness or swelling. Some days previously the neck had been stiff but this had subsided. The patient had had 2 normal pregnancies and was 1 year past the menopause. She had always been well.

Physical examination revealed a toxic, lethargic, trembling, dehydrated patient who was undernourished and appeared older than her stated age. There was a papulovesicular rash over the chest. The temperature was 104°F, the respiratory rate 28, the pulse rate 130, and the blood pressure 140/60 mm. Hg. The tympanic membranes were pallid and slightly bulging. The throat was hyperemic without exudate. The thyroid was diffusely enlarged to twice normal size. No tenderness was discerned, no bruit was heard, and no venous distention was seen. Examination of the chest was negative. The cardiac impulse was forceful and 8 cm. to the left of the midsternal line in the fourth intercostal space. The abdomen was scaphoid, and tenderness to palpation was present over both lower quadrants. The external genitalia were not remarkable except for cervicitis.

The urine revealed 4 plus protein, many bacteria, and an occasional cast. The hemoglobin was 10.8 Gm., the hematocrit was 39 per cent, and the leukocytes numbered 13,100 with 70 segmented granulocytes, 11 band cells, 13 lymphocytes, and 6 monocytes. A serologic test for syphilis was negative. The blood urea nitrogen was 17 mg., cholesterol 92 mg., total protein 7.4 Gm., creatinine 0.7 mg., and total bilirubin 3.8 mg. per 100 ml. The albumin and globulin were 3.4 and 4.0 Gm. respectively, and the serum bilirubin was 2.8 mg. direct and 1.0 mg. indirect. Cephalin flocculation was 2 plus at 24 hours and 3 plus at 48 hours. The prothrombin time was 17 seconds with a control of 14. The protein-bound iodine was 9.2 mcg. per 100 ml., and the triiodothyronine uptake was 53 per cent.

The hospital course lasted 15 days. During this time the temperature remained for the most part above 102°F, with an occasional spike to 105°F, and the pulse rate varied from 110 to 140 per minute. Fluid intake exceeded output, and the weight increased from 103 to 117 pounds. On the third hospital day the abdomen became distended, and catheterization yielded 1,800 ml. of urine. Radiographs of the abdomen were suggestive of air under the diaphragm, but this was not confirmed. The hemoglobin steadily declined to 6.3 Gm., the leukocyte count gradually rose to 21,000, and the platelets varied from 50,000 to 100,000. There was a consistent neutrophilia, and bone marrow aspiration disclosed a granulocytic hyperplasia. Reticulocytes gradually increased from 0.6 to 2.6 per cent. On the third hospital day jaundice became pronounced; the direct and indirect bilirubins were 6.8 and 0.3 mg. per 100 ml. Bile and urobilinogen appeared in the urine. Also at this time the serum creatinine and blood urea nitrogen were 2.6 and 57 mg. per 100 ml. respectively. Both thereafter returned to normal. The serum lactic dehydrogenase rose from 1,200 on the second hospital day to 2,000 units per ml. on the eighth hospital day. The serum glutamic transaminase ranged from 64 to 100 units per ml., and the serum pyruvate transaminase levels from 18 to 22 units per ml. On the fourth and seventh days the protein-bound iodine was 5.0 and 6.1 mcg. per 100 ml. The triiodothyronine uptake test was not repeated. The blood cholesterol was 66 and 81 mg. on the seventh and tenth hospital days.

Serum electrolytes tended to be low. Serium calcium, phosphorus, alkaline phosphatase, amylase, L.E. preparations, Coombs' test, various agglutinations, tuberculin skin test, and cerebrospinal fluid were normal. On the eighth and tenth hospital days the stool benzidine was 4 plus. X-ray films of the chest revealed apical scarring and hilar calcification of lymph nodes. Electrocardiograms revealed atrial flutter, right ventricular strain, and changes suggestive of pericarditis. A liver scan indicated hepatomegaly, and intravenous pyelograms disclosed a bifid collecting system on both sides.

The patient was given chloral hydrate by mouth, and fluids; penicillin, digoxin, and cephalin were given by vein. On the ninth hospital day potassium iodide and prednisone were given. On the eleventh day 8 drops of Lugol's solution was given every 3 hours.

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* Professor of Pathology, George Washington University School of Medicine, 1331 H Street, N.W., Washington, D. C. 20005.

Despite these measures the patient's condition continued to worsen. She appeared toxic, and was febrile, excessively restless, and desperately ill. Death occurred on the fourteenth hospital day.

Clinical Discussion

Dr. Robert W. Martin*: On admission the papulovesicular rash over her chest suggested the possibility of chickenpox. The blood picture did not support this possibility, however, and she was too sick, unless there was some additional underlying disease. A drug-induced rash was eliminated because there was no history of drug ingestion. Of course, the patient could have had a bacteremia with localization in the skin, but a pustular nature is not described and we have no blood cultures to confirm this possibility. Since the patient had tenderness of the lower abdomen, pelvic inflammatory disease and septicemia were possible.

Physical examination disclosed an enlarged thyroid which was nontender. This latter aspect tends to exclude acute thyroiditis. It does not exclude Graves' disease, but the patient had an atrial flutter. Thyrotoxicosis is an acceptable explanation for the flutter since degenerative changes may occur in the myocardium, and I am especially inclined to this interpretation in the presence of a thyroid gland that is twice normal size. The patient had only 10.8 Gm. of hemoglobin at a time when she was also noted to be dehydrated. The reason for this is not clear. Hemolysis is possible although the Coombs' test was negative and the serum bilirubin is for the most part conjugated and direct. Hemolysis is therefore not likely. There was a leukocytosis, and the platelets were decreased. These 2 findings are, of course, consistent with acute infection. Graves' disease is not ordinarily attended by leukocytosis unless it is very fulminant. What is the renal lesion that is indicated by proteinuria and casts? I would think that both of these could be accounted for by the degree of toxicity this patient showed. Moreover, I am not inclined to think that her renal lesion was advanced or permanent since the blood urea nitrogen, after rising to 57 mg., returned to normal although her clinical condition continued to worsen. I regard these renal features as being in part due to transient heart failure which was evidenced by her gain in weight.

During the hospital course jaundice became pronounced with a direct bilirubin of 6.8 mg. The direct nature of the pigment indicates that this was not due to hemolysis. On the other hand, the normal alkaline phosphatase weighs against biliary obstruction, and this is further indicated by urobilinogen in the urine so that if an obstruction existed it could not have been complete. I do not think viral hepatitis is likely with normal serum glutamic and pyruvic transaminase values. Can thyrotoxicosis account for jaundice? It can because of focal necrosis that occurs in the liver and tends to be centrilobular. Moreover, in such cases the bilirubin tends to be direct as in this case. When such a liver is also affected by heart failure, even though transient, the reason for jaundice is further advanced, and I think these 2 factors would provide adequate explanation for this amount of pigment retention. On the eighth and tenth days the stool was noted to be guaiac-positive, and this could be due to stress ulceration in the stomach or perhaps a consequence of the thrombocytopenia.

Altogether, I am building a case for Graves' disease. The laboratory work is somewhat disturbing, however. The protein-bound iodine and the triiodothyronine uptake were both elevated in the beginning, but the former subsequently returned to normal and the latter was not repeated. Graves' disease should be attended by a consistently elevated protein-bound iodine. Two blood cholesterols, however, were under 100 mg. and this is characteristic of hyperthyroidism. The serum lactic dehydrogenase was quite elevated and for this I can only presume that degenerative changes were taking place in the heart and liver and other tissues.

So my conclusion is that this 46-year-old woman was suffering from hyperthyroidism and that she developed an upper respiratory infection which acted as a precipitating factor and then progressed to fulminating hyperthyroidism or "thyrotoxic storm."

Dr. Arthur Rosenbaum†: Do you think this diagnosis is tenable in the face of a low protein-bound iodine?

Dr. Martin: It is a point against the diagnosis, but it occasionally occurs and the other evidence is strong.

Dr. W. Tabb Moore‡: The questions here seem to me to be a short illness associated with fever, joint pain, vomiting, skin rash, proteinuria, urinary casts, transient azotemia, jaundice, pericarditis, and gastrointestinal bleeding terminating in death after 2 weeks. I will discuss the case on the basis of the patient's fever, which seems to be a major finding. Although this suggests suppuration, nothing is given to indicate a hepatic abscess or acute cholangitis or a perirenal abscess. Specific infections should nevertheless be mentioned. Miliary tuberculosis is a possibility, but no support for this was seen in the chest X-ray films. Also, the alkaline phosphatase is usually elevated and this was not present, and the tuberculin skin test is almost always positive, especially if it is done carefully and repeated. Assuming that this was done carefully and before the prednisone was given, it would almost certainly exclude a diagnosis of miliary tuberculosis.

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* Resident in Medicine, George Washington University Hospital.

† Clinical Professor of Medicine and Moderator of these Conferences.

‡ Clinical Instructor in Medicine.

Blood dyscrasias may account for "fever of undetermined origin," and acute monocytic leukemia may do this in particular. We have no evidence for such a diagnosis, however, and for the same reason Hodgkin's disease cannot be considered seriously. The clinical course is too short for either Hodgkin's disease or some other hidden neoplasm.

The diagnosis of "thyroid storm" has to be considered. The difficulty here is that 2 protein-bound iodine determinations were normal, and with "thyroid storm" they should have been greater than 15 mcg. per 100 ml. This value is easily elevated by drugs and environmental influences, but I am not aware of anything that will depress the protein-bound iodine except medication with mercury which is not mentioned here. The triiodothyronine test is nonspecific and may be elevated for reasons other than thyrotoxicosis. Finally, since the serum lactic dehydrogenase is not ordinarily elevated in Graves' disease I do not think, in view of these observations, that the diagnosis of "thyroid storm" is tenable.

A group of diseases which I cannot discard, however, is the collagen-vascular diseases. Rheumatic fever is not at all likely at the age of 46 with no previous history. Dermatomyositis cannot be excluded, although the muscles were not noted to be tender and the violaceous hue to the periorbital tissues was not seen. Systemic lupus seems more likely. It is true there was no butterfly rash and the L.E. cell preparations were negative, but this occurs in about a third of the cases. The jaundice, gastrointestinal bleeding, renal findings, pericarditis, thrombocytopenia, and temporary azotemia are all compatible with systemic lupus erythematosus. The fulminant cases, incidentally, may show very few morphologic changes such as wireloop lesions in the glomeruli. I would like to come to 1 diagnosis here but find it is somewhat difficult. Tuberculosis with associated adrenal disease is another possibility. I think a biopsy of the liver might have revealed the diagnosis and I would have recommended it. Altogether, I think systemic lupus or some other form of acute vasculitis is the most likely diagnosis.

Dr. Rosenbaum: If this were systemic lupus, would you expect the blood urea nitrogen to both rise and then fall?

Dr. Moore: I do not believe this rise was due to renal disease but to prerenal disease, and therefore I think this could happen.

Dr. Monroe J. Romansky*: I want to point out that negative tuberculin skin tests do occur with miliary tuberculosis. In fact, about 8 per cent give negative results. The patient needs to be well hydrated so that a vesicle is formed when the test is made, otherwise the test may be falsely negative.

Dr. Thomas M. Peery†: I suppose a pathologist's clinical diagnoses are always suspect, but it seems to me that a very attractive diagnosis has not even been mentioned. It is leptospirosis. That would account for the fever, jaundice, arthralgias, muscle weakness, leukocytosis, renal findings, and fulminant clinical course.

Dr. Rosenbaum: I thought of this too, Dr. Peery, but realize that leptospirosis is almost always associated with headache so that I thought that diagnosis unlikely on that basis.

Clinical Diagnoses

Dr. Martin: "Thyrotoxic storm."

Dr. Moore: Lupus erythematosus.

Pathology Discussion

(Autopsy 5384)

Dr. Smith: There is no single finding in this case that establishes any diagnosis beyond all doubt. We are left with a combination of findings which, taken together, establish, in my opinion, a diagnosis of "thyrotoxic storm."

The heart weighed 360 Gm., and the pericardium was roughened by fibrinous adhesions. Of special interest was the microscopic finding of focal necrosis of the myocardium associated with a light polymorphonuclear infiltration (figure 1).

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* Professor of Medicine.

† Professor of Pathology.

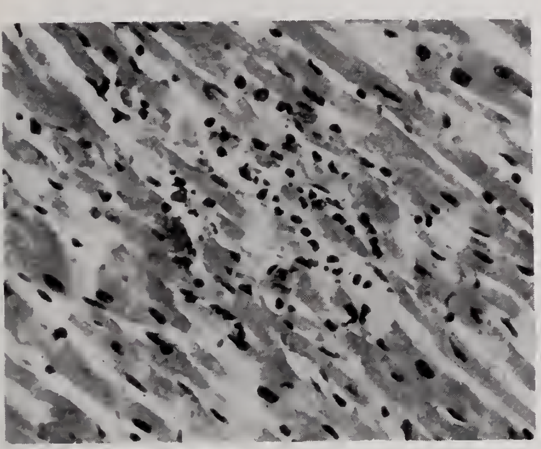


FIG. 1. Focal necrosis and acute inflammation of myocardium.

The thyroid gland weighed 50 Gm. and was symmetrically enlarged to about twice normal size. The cut surfaces were uniformly fleshy and light reddish brown. Histologic examination revealed small tortuous acini with columnar epithelium, papillary infolding of the lining cells, and conspicuous depletion of colloid with marginal scalloping of the small amounts that remained (figure 2). These changes are characteristic of hyperthyroidism.

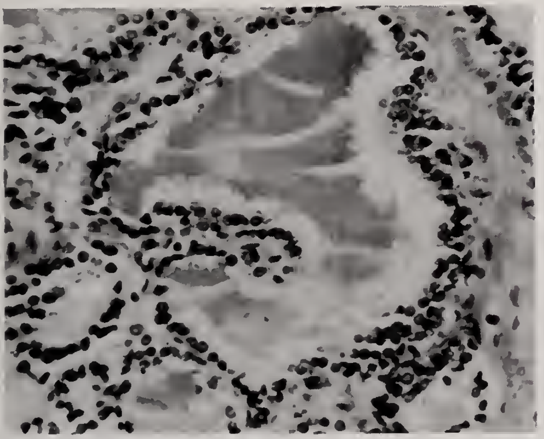


FIG. 2. Colloid depletion, columnar epithelium, and papillary infolding of lining cells characteristic of thyroid hyperplasia.

In the liver there were foci of necrosis with round-cell infiltration (figure 3). These were numerous and showed no consistent localization within the lobules. Necrosis and slight inflammation were also seen in skeletal and smooth muscle, especially of the stomach. Moreover, the spleen weighed 230 Gm., and the lymph nodes were large. Altogether, these changes are morphologically characteristic of "thyrotoxic storm."[1]

The clinical features fit too. Ingbar[2] pointed out several conditions of "hyperthyroid storm": a precipitating factor, an abrupt onset, and a previous history of thyrotoxicosis. Our patient has the first and second but lacks the third. The clinical features also include fever, tremor, restlessness, tachycardia, weakness, muscle wasting, and in the terminal condition, apathy, stupor, and coma. Our patient had all of these.

In connection with these 8 features Ingbar and Woeber[3] make the following statement: "This clinical picture in a patient with preëxisting thyrotoxicosis, or with goiter or exophthalmos, or both, is sufficient to establish the diagnosis, and treatment, which is urgently required, should not await laboratory confirmation." Ingbar[2] then goes on to cite 3 additional features of "thyrotoxic storm," all of which are observed in the present case. They are hepatomegaly and slight jaundice, diarrhea, nausea, vomiting, and abdominal pain with an increased protein-bound iodine and a decreased serum cholesterol.

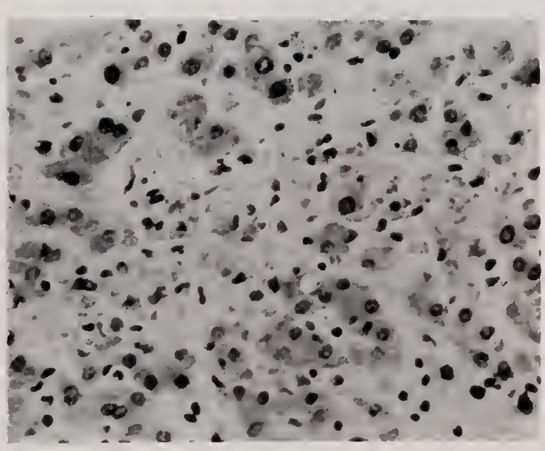


FIG. 3. Focal necrosis and slight, acute inflammation of liver.

From this battery of clinical and laboratory features, nearly all of which were present in this patient, it is my conclusion that "thyrotoxic storm" is the principal diagnosis and that the patient died of this fulminating disease.

Anatomic Diagnoses

Acute thyrotoxic storm with hyperplasia of thyroid (50 Gm.), acute fibrinous epicarditis, acute myocarditis, focal necrosis of the liver, focal degeneration of skeletal and smooth muscle, and hyperplasia of the spleen (230 Gm.) and lymph nodes.

(Continued on page 476)

President's Page

THE INDEPENDENT VERSUS THE CLINIC PHYSICIAN—ADVANTAGES AND DISADVANTAGES

The day of the solo physician, meaning the doctor who does everything for his patients without any help from his colleagues, is long past. The greatest volume of medical service in the United States is now rendered by the independent physician including the small groups and partnerships that prorate expenses and income proportional to work done. Transportation and fast communication have solved the problem of specialistic care of the sick even in isolated areas. The independent physician has endeared himself to the patient and is the most sought after. He has the closest personal contact with his patient; he can select among other independent physicians and hospitals those best suited to his patients' special problems.

The patients realize that the big all-purpose clinics, whether physician- or medical school-operated, must necessarily keep each member of the group busy, increasing referrals and decreasing the direct one-physician/one-patient relationship so wanted by most people. The patients question the extensive use of tests and surgical and other procedures, often believing they are done in order to finance the elaborate establishments. Persons subscribing to the Comprehensive Prepayment plan are aware of the need for keeping expenses within the income of the Clinic. They note that services are controlled, hospitalization avoided, night and holiday services restricted.

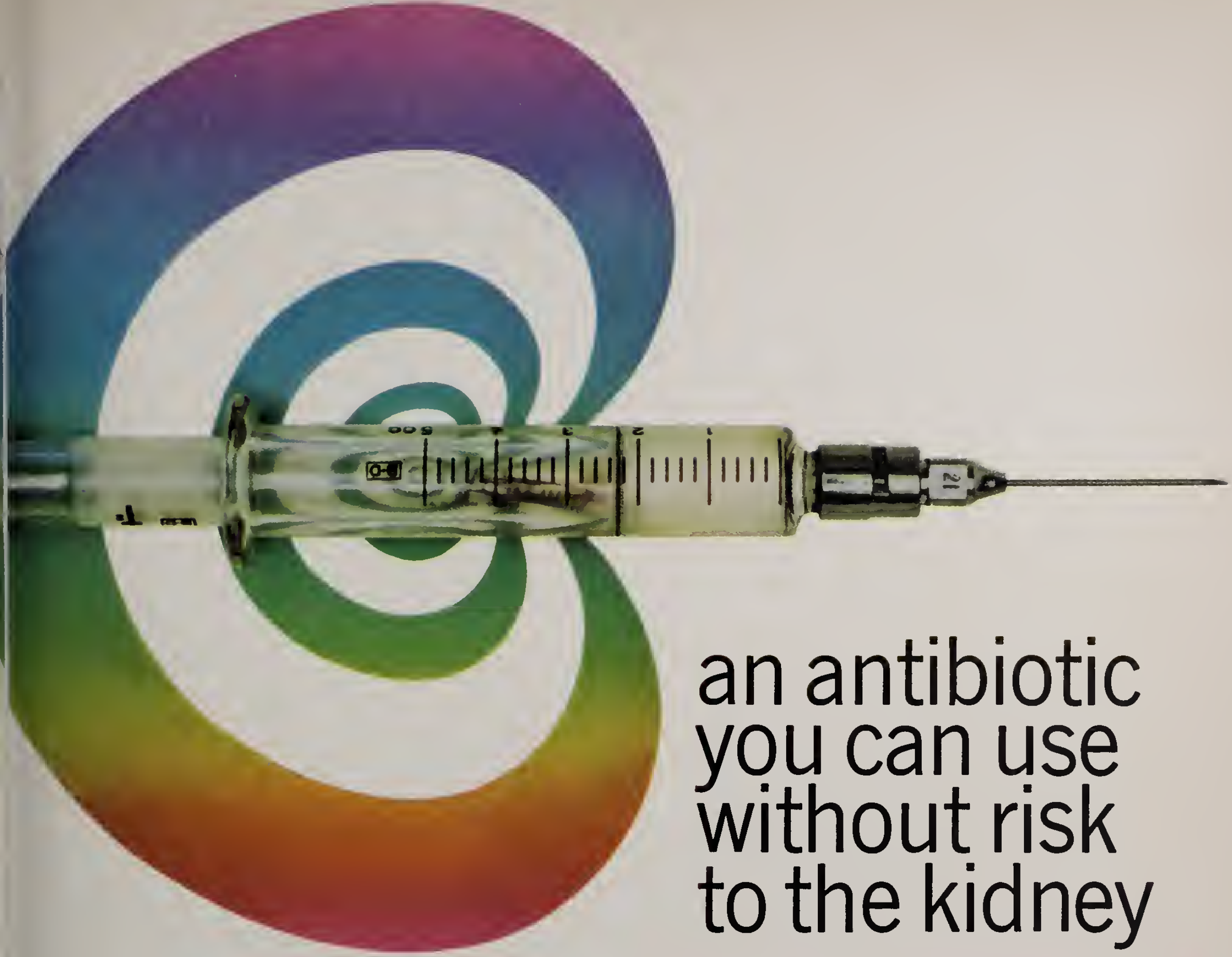
The independent physician renders quality service partly because of his desire to serve and partly because his living depends solely on pleasing the individuals who pay him fees. However, he is free to work as he pleases. He can select his hours of work, he decides when he wants to be away, he makes his friends among his colleagues, and he can build teams to perform services he desires. He, with other independent physicians, can arrange on short notice to be away for a few hours or for an evening and in advance for his vacations. He can attend meetings, take postgraduate courses, and write scientific papers as he pleases. He can select employees best suited to his needs and he can operate his office and business as he desires.

In medical school clinics the desire of the physician to serve patients as individuals is diluted by his need to perform as a teacher and researcher. He has such advantages as fixed salary, paid time for vacations, insurance and pension plans, time for teaching and for research, and his business is handled for him. The last applies even to his assistants, secretaries, consultants, and suppliers of ancillary services, who are customarily employed by the administrator of the medical school. He usually is required to write and teach and to conduct research whether convenient or not. His time off, for vacations and meetings, is controlled by his group and is not scheduled for his convenience. He must produce income for the group and he must add prestige to his medical school or he will be replaced.

The physician in the Prepaid Comprehensive medical groups is an employee. He has his working conditions, his hours, his associates, and his secretaries selected for him. If his associates do less work than he, his burdens, if he is conscientious, are greater. He competes for promotion by volume of work and years of service rather than by the quality of his work. Yet he is free from the operation of a business.

Many of the advantages and disadvantages of the physician working in clinic groups spill over to the small, true partnerships where income depends on remuneration less expense and an equal sharing of the net.

The independent physician, who cares for most of the people in this country, provides a unique service to the public and he himself enjoys the prerogatives of free people. Most important, the independent physician is able to serve his patient as he believes best.



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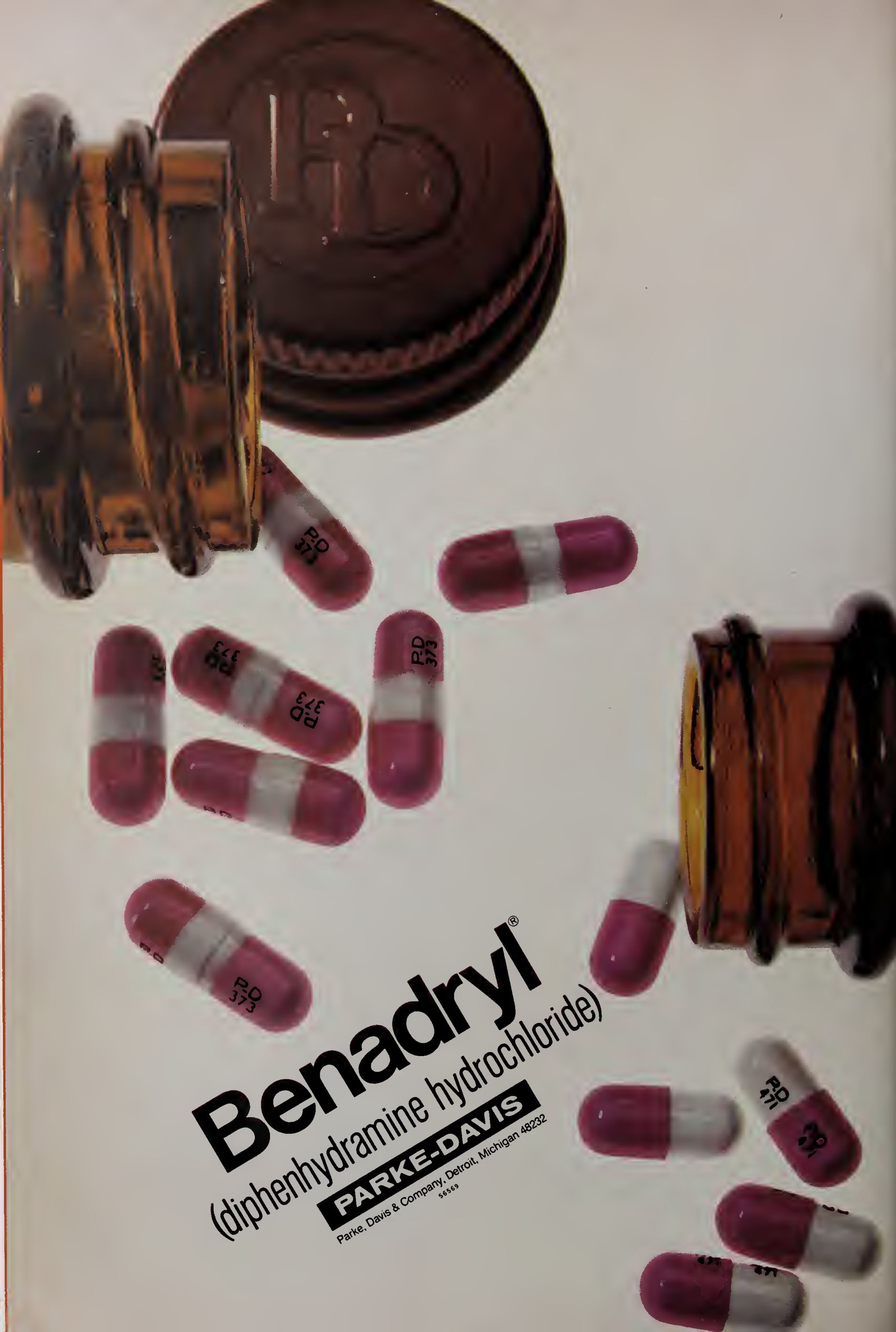

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Editorials

Scientific Assembly—1969

Again it is time to call attention to the forthcoming Annual Scientific Assembly of the Medical Society of the District of Columbia. This year, in a special attempt to avoid any conflict with national meetings, our scientific presentation will be held on September 24, 25 and 26. In an attempt to return to a more intimate atmosphere, perhaps more centrally located for many of the downtown physicians, the meetings will be held once more at the Mayflower Hotel. Many of the usual social garnishings—the Medical Society luncheon with the Philip Burka awards, Medical School luncheons, the Doctors' Office Staff Dinner, and the Cocktail Reception and Dinner Dance at the Assembly's conclusion—are scheduled to add the festive flavor. Of particular note are the increased efforts of the Woman's Auxiliary to make the September 26 Dinner Dance a gala affair.

The nucleus of any productive scientific meeting is its program, and an excellent program emanates only from a program committee which has performed its task with diligence and deep interest. We were most fortunate when Dr. Nathan Zvaifler, Director of the Division of Rheumatic Diseases at Georgetown University Hospital, accepted the assignment as Chairman of the Program Committee. Participating in the program selection under Dr. Zvaifler's direction were Drs. Edward Cornwell, John Dillon, Robert Donohoe, Philip Ferris, Karl Jonas, George Kelser, and Christopher Martin. An ambitious program was outlined, designed to appeal to the majority of practicing physicians and to avoid repetition of presentations of the recent past.

We were aware, as perhaps never before, of the multitude of meetings held each year in this country—many national and prestigious, many focusing on subspecialty interests, and the many state and local gatherings. To select a program of current, broad interest with speakers of the highest calibre is therefore a considerable challenge to any program committee. Rising travel costs and honoraria to remain competitive are accepted signs of the times. This Medical Society, recognizing these factors, gave the Program Committee a free hand.

From this has evolved an exciting program with prominent and articulate experts as contributors to the presentation. An interesting symposium is planned under the title, "What Will Medicine Be Like in the 1970's?" Moderated by Dr. Zvaifler, this symposium will include discussions regarding the role of computers, human genetics, and a paper by the eminent Dr. Willem Kolff on "Artificial Organs versus Transplantation." A session is to be devoted to "The Diagnostic Uses of Radioactive Isotopes," another to "Pulmonary Embolism and Infarction," which will include discussion on the pathogenesis of phlebitis and embolism, as well as a review of the latest information on "The Association of Pulmonary Embolism and Oral Contraceptives" by Dr. Kenneth Moser. A full afternoon devoted to coronary artery disease will include discussion of lipid abnormalities by Dr. Robert Levy, of the National Heart Institute, a paper on coronary arteriography by Dr. Richard Gorlin, and one on the surgical treatment of coronary artery disease by Dr. Arthur Vineberg. Finally, there will be a session on colon and rectal diseases by a panel including Dr. Thomas Almy, Dr. Richard Marshak, Dr. Sumner Kraft, and Dr. Michael Deddish.

If indeed the program for the 1969 Scientific Assembly appears to have considerable merit, it deserves the support and attendance of the Society's membership. We would ask that members review the program as listed elsewhere in this issue and support this effort both by their attendance and participation.

Louis Gillespie, Jr., M.D.
General Chairman, 1969 Scientific Assembly

Opinion expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Organization for Efficient Delivery of Health Care in the Washington Metropolitan Area

There is so much misunderstanding and lack of information as to what the Group Health Association of Washington, D. C. is and is not that I welcome the opportunity to set forth in brief form some of the goals, mechanics and concepts of this type of patient care as well as some of the difficulties inherent in this form of medical care organization.

GHA was organized by a group of Federal employees of the Home Owners Loan Corporation in February of 1937 with the approval of the late Honorable John H. Foley, Chairman, Federal Home Loan Bank Board. It was the desire of over 1,000 employees and their families to form a voluntary mutual association which would provide comprehensive health care at a stated premium per month so that they could budget their health care costs.

As many of you will recall, some difference of opinion on medical ethics arose between the District Medical Society and the organizers of Group Health Association which became bitter. This culminated in legal conflicts terminating in a Supreme Court decision that unanimously affirmed the judgment of the United States Court of Appeals which had found the AMA and the Medical Society of the District of Columbia guilty of conspiracy. Besides the legal ramifications, probably more important was the fact that once this issue was resolved, the doctors who were affiliated with Group Health Association were granted hospital privileges, and their patients were able to get services of consultants and of surgeons in the medical community on a reasonable cost basis.

In July of 1960 the Federal Government initiated the Federal Employees Health Benefits Program. This Act resulted in a spurt in the number of persons who chose Group Health, as well as with other mechanisms of organization of health care in the District, i.e., Blue Cross-Blue Shield, Postal Workers, and a commercial insurance company, Aetna. The membership of Group Health consists of 72,000 persons. Three-fourths are Federal workers and their families, both those who are actively employed and Government annuitants, about one-sixth are Transit workers and their families, and one-sixth are individual members of the community who elect Group Health. Patients who enter through the contract mechanism must be accepted with all preëxisting conditions.

Our ratio of physicians to patients is roughly 1 to 900. There are completely equipped clinical laboratory and radiology departments and there are no dollar deterrents nor any criteria set on the physicians for referral to the ancillary departments, like laboratory and X-ray or physical therapy, other than the physician's judgment or joint judgment after formal or informal consultation with colleagues in the same department or in other specialties. The patient may be referred at no extra cost. All information relating to any given patient, regardless of the department, is contained in 1 medical record. These 2 points are simply to illustrate the implementation of 2 other concepts along with early detection of disease which we consider so important, i.e., continuity of care and comprehensiveness of care, and as much emphasis on outpatient care as is possible so that we are able to keep our hospital admission rate at 540 days per thousand. Certainly the concern for quality of care and the foregoing tenets which are our aim are only effectuated in direct correlation to our successful recruitment of well qualified phy sicians.

Doctors are paid in various ways. This is probably one of the most misunderstood points about Group Health. Less than half of our doctors are on full-time salary. Others are paid on a per capitation fee for all members enrolled, others on a fee-for-time, that is, per session; others, in the more esoteric specialties where our own patient load would not require our hiring them, like a surgeon who has the ability and training to do transplants, would be paid on a fee-for-service basis to do an organ transplant. Those on salary are also paid on an incentive basis. There are several mechanisms of payment, none of which is directly related to the quantity of work done by the physician but rather assurance of his availability on a 24-hour basis in all departments on scheduled time. This is true of vacations, and, of course, there are the customary fringe benefits of insurance, study leave, hospital coverage, and disability pay.

In summary, the aim of the Plan is to make the quality of care comparable to what we in the Medical Society like to think exists in the entire District of Columbia medical community. We emphasize the use of ambulatory services so that there will be no unnecessary hospitalization, and we conserve the resources of manpower and facilities in the community by not duplicating services that are available on an ambulatory basis. Most importantly, the organization works for physician satisfaction by assuring him contact with his peers, access to all necessary ancillary personnel, no concern with "housekeeping" and the business operation, and providing him the best stimulus available—competent, well-trained, committed physicians. These are our goals.

Thomas M. Arnett, M.D.
Medical Program Administrator, Group Health Association, Inc.; Second Vice President, The Medical Society of the District of Columbia

Drug Dependence—Morphine

Morphine, called M, dreamer, and known by many other names, is the principal active component of opium. Morphine sulphate is a white crystalline powder, available in light porous cubes or small white tablets. It may be taken by any route; its abusive use is mostly by intravenous injection.

Generally sedative and analgesic (rarely excitatory), the initial reaction is unpleasant to most people, but calming supersedes and, depending on dose, may progress to coma and death from respiratory failure.

Constricted pupils are indicative of the abuser. He is calm, inattentive, "on the nod," with slow pulse and respiration.

Man is very sensitive to the respiratory depressant effect until tolerance develops. Psychic and physical dependence and tolerance develop readily, with a characteristic withdrawal syndrome.

DOCPAC BRIEFS

or

Law and Order*

Will the doctors ever march on Washington? I certainly hope not; but at the same time you do have a responsibility to voice your opinions and your views in Washington.

Supreme Court Justice Hugo L. Black recently stated that law and order must prevail, and he upheld the police authorities in controlling the conduct of street marchers because, he said, "such conduct by its very nature tends to infringe upon the rights of others."

Mr. Justice Black said that ours is a government in which reasoned decisions are made by public officials chosen in a way which the law provided. "Those laws do not provide that elected officials will act in response to peremptory demands of the leaders of tramping, singing, shouting, angry groups."

We must have law and order in this Nation. There is a lesson to be drawn from what happened in Memphis and from what has been happening with increasing intensity throughout the Nation in recent years. That is that mass protests, mass demonstrations, and mass marches and the like, whether labeled nonviolent or otherwise, can only serve to encourage unrest and disorder, and to provoke violence and bloodshed. And in the end those who advocate such methods often become, themselves, the victims of the forces they themselves set in motion.

In any case, I know you have an opportunity to work for the men you think can best represent your philosophy.

That's what DOCPAC is all about. We need more members and dues (individual $20, family $30) to work with. Send to DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D. C. 20037 or to the Medical Society, 2007 Eye Street, N.W., Washington, D. C. 20007.

William H. Cooper, M.D.
Chairman, D. C. Political Action Committee

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* Excerpts from "Politics Without Doctors Is Bad Medicine" by Senator Paul Fannin, of Arizona, and reprinted by permission from the Journal of the Georgia Medical Association, October 1968.

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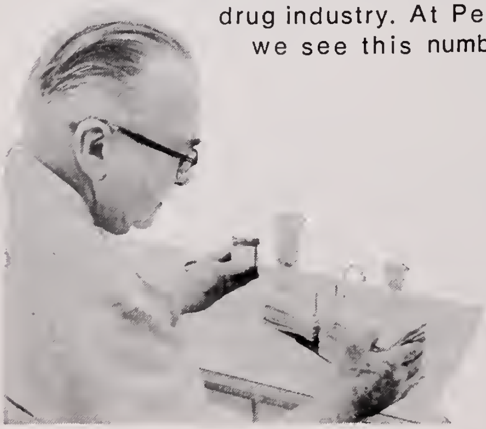

OFFICIAL PROGRAM

1969 Scientific Assembly

The Medical Society of the District of Columbia

MAYFLOWER HOTEL

(All Meetings in the Grand Ballroom)

Scientific Program

WEDNESDAY MORNING, SEPTEMBER 24, 1969

Louis Gillespie, M.D., *Presiding*
General Chairman, 1969 Scientific Assembly

Welcome by **Frank S. Bacon, M.D.,** President, The Medical Society of the District of Columbia

THE DIAGNOSTIC USES OF RADIOACTIVE ISOTOPES

Moderator: **William H. Beierwaltes, M.D.**
Professor of Medicine and Director, Nuclear Medicine, University of Michigan Medical Center

9:00 **THYROID DISEASE**
William H. Beierwaltes, M.D.

9:30 **THE CARDIOVASCULAR SYSTEM**
Richard A. Wetzel, M.D.
Department of Radiology, University of Virginia School of Medicine

10:00 **THE CENTRAL NERVOUS SYSTEM**
Giovanni Di Chiro, M.D.
Head, Section on Neuroradiology, National Institute of Neurological Diseases and Stroke

10:30 Intermission—Visit Exhibits

11:00 **LIVER, SPLEEN AND PANCREAS**
August Miale, Jr., M.D.
Director, Radioisotope Unit, and Associate Professor of Medicine and Radiology, Georgetown University Medical Center

11:30 **PANEL DISCUSSION**

11:50 Recess for Lunch—Visit Exhibits

Program Approved by AAGP

The Assembly's Scientific Program has been approved by the American Academy of General Practice for its members for a maximum of 15 hours' credit under Category I.

ACKNOWLEDGMENT: The Medical Society expresses its appreciation to Mutual of Omaha Insurance Company, Joseph E. Jones, Administrator, for contributing to the printing of the Official Program.

WEDNESDAY AFTERNOON, SEPTEMBER 24

CORONARY ARTERY DISEASE

Moderator: **George A. Kelser, Jr., M.D.**

Associate Professor of Medicine, George Washington University School of Medicine

2:00 **PREDISPOSING LIPID ABNORMALITIES: DIAGNOSIS AND CLINICAL MANAGEMENT**
Robert I. Levy, M.D.
Head, Section on Lipoproteins, Molecular Disease Branch, National Heart Institute

2:40 **THE ROLE OF CORONARY ARTERIOGRAPHY IN CARDIOVASCULAR DIAGNOSIS**
Richard Gorlin, M.D.
Chief, Cardiovascular Division, Peter Bent Brigham Hospital, Boston

3:10 Intermission—Visit Exhibits

3:35 **NEW SURGICAL APPROACHES TO THE TREATMENT OF CORONARY ARTERY DISEASE**
Arthur Vineberg, M.D.
Royal Victoria Hospital, Montreal, Canada

4:15 **PANEL DISCUSSION**

THURSDAY MORNING, SEPTEMBER 25

WHAT WILL MEDICINE BE LIKE IN THE 1970's?

Moderator: **Nathan J. Zvaifler, M.D.**

Director, Division of Rheumatic Diseases, Department of Medicine, Georgetown University Medical Center

9:15 **THE ROLE OF COMPUTERS**
Thomas T. Fleming
President, Scientific Resources, Inc., Philadelphia

10:00 **HUMAN GENETICS**
A. Donald Merritt, M.D.
Chairman, Department of Human Genetics, University of Indiana Medical Center

10:45 Intermission—Visit Exhibits

11:00 **ARTIFICIAL ORGANS VERSUS TRANSPLANTATION**
Willem J. Kolff, M.D., Ph.D.
Chairman and Professor of Surgery, Division of Artificial Organs, Department of Surgery, University of Utah, College of Medicine

11:45 **PANEL DISCUSSION**

11:50 Recess for Lunch—Visit Exhibits

THURSDAY AFTERNOON, SEPTEMBER 25

DISEASES OF THE COLON AND RECTUM: PROGRESS AND PROBLEMS

I. INFLAMMATORY DISEASES OF THE COLON

Moderator: **Thomas P. Almy, M.D.**

Professor and Chairman, Department of Medicine, Dartmouth Medical School

2:00 **ETIOLOGY AND EXPERIMENTAL STUDIES**
Sumner C. Kraft, M.D.
Associate Professor of Medicine, University of Chicago

2:15 **THE MEDICAL MANAGEMENT OF THE PATIENT**
Thomas P. Almy, M.D.

2:30 **THE ROLE OF SURGERY**
Michael R. Deddish, M.D.
Attending Surgeon and Chief, Rectum and Colon Service, Memorial Hospital, New York

2:45 **RADIOLOGIC ASPECTS**
Richard H. Marshak, M.D.
Mt. Sinai Hospital, New York

3:00 **PANEL DISCUSSION**

3:15 Intermission—Visit Exhibits

II. CARCINOMA AND DIVERTICULA

Moderator: **Michael R. Deddish, M.D.**

3:35 **RADIOLOGIC DIFFERENTIATION OF MALIGNANT AND NONMALIGNANT BOWEL DISEASE**
Richard H. Marshak, M.D.

3:50 **THE OPTIMAL TIME FOR SURGICAL INTERVENTION**
Michael R. Deddish, M.D.

4:05 **WHAT IS DIVERTICULITIS?**
Thomas P. Almy, M.D.

4:20 **WHO NEEDS A BARIUM ENEMA AND SIGMOIDOSCOPY?**
Sumner C. Kraft, M.D.

4:35 **PANEL DISCUSSION**

FRIDAY MORNING. SEPTEMBER 26

SYMPOSIUM ON PULMONARY EMBOLISM AND INFARCTION

Moderator: **Kenneth M. Moser, M.D.**

Associate Professor of Medicine and Chief, Pulmonary Division, Department of Medicine, University of California School of Medicine, San Diego

9:00 **THE ASSOCIATION OF PULMONARY EMBOLISM AND ORAL CONTRACEPTIVES**
Kenneth M. Moser, M.D.

9:15 **WHO DEVELOPS PHLEBITIS, EMBOLISM, AND WHY?**
Duncan P. Thomas, M.D., Ph.D.
Assistant Professor of Medicine, Tufts University School of Medicine, and Physician-in-Charge, Vascular Laboratory, Lemuel Shattuck Hospital, Boston

9:30 **CLINICAL DIAGNOSIS OF PULMONARY EMBOLISM AND INFARCTION**
Arthur A. Sasahara, M.D.
Assistant Chief, Medical Service, and Director, Cardiopulmonary Laboratory, Veterans Administration Hospital, West Roxbury, Mass.

9:45 **RADIOACTIVE SCANNING AND ANGIOCARDIOGRAPHY IN THE DIAGNOSIS OF PULMONARY EMBOLISM**
Henry N. Wagner, Jr., M.D.
Professor of Medicine and Radiological Sciences, Department of Medicine, Johns Hopkins Medical Institutions

10:00 **RECENT TRENDS IN MEDICAL TREATMENT OF PULMONARY INFARCTION**
Duncan P. Thomas, M.D., Ph.D.

10:30 Intermission—Visit Exhibits

10:50 **RECENT TRENDS IN SURGICAL TREATMENT, INCLUDING THE ROLE OF EMBOLECTOMY**
David C. Sabiston, Jr., M.D.
Professor and Chairman, Department of Surgery, Duke University Medical Center

11:20 **PANEL DISCUSSION**

12:00 Adjournment

THE SCIENTIFIC EXHIBIT

All Exhibits Open Wednesday and Thursday, 9 A.M. to 5 P.M.;
Friday, 9 A.M. to 12 Noon

AGGRESSIVE MANAGEMENT OF INCOMPLETE ABORTION
James L. Breen, M.D., Chief, Department of Gynecology-Obstetrics, Martland Hospital Unit of the New Jersey College of Medicine and Dentistry, Newark, N. J.

TEST YOUR ALLERGIC ACUMEN
Stanley I. Wolf, M.D., Silver Spring, Md., and Solomon Barr, M.D., Chairman, Section on Allergy, The Medical Society of the District of Columbia

ORAL CONTRACEPTION: PUBLIC HEALTH VIEWPOINT
Morten B. Andelman, M.D., Lincolnwood, Ill.

DETECTION OF CARCINOMA OF THE CERVIX
I. Nyirjesy, M.D., Cervical Cancer Detection Program, D. C. General Hospital, and Ernest W. Lowe, M.D., Chief Medical Officer, Department of Obstetrics and Gynecology, D. C. General Hospital, Washington

METHODOLOGY OF ABORTION
William J. Jaffurs, M.D., Charles E. Townsend, M.D., David H. Kushner, M.D., and Douglas G. Martz, M.D., Medical Staff, Columbia Hospital for Women, Washington

ANGIOGRAPHY OF RENAL TRAUMA
Whei-Rung Fu, M.D., Larry W. Stanton, M.D., and William W. Stanbro, M.D., George Washington University Hospital

DIABETIC RETINOPATHY—TREATMENT BY PHOTOCOAGULATION
William Gilbert, M.D., Department of Ophthalmology, George Washington University Medical Center

CRYOSURGICAL TECHNIQUES IN CANCER THERAPY
Paul E. Shorb, Jr., M.D., and Calvin T. Klopp, M.D., George Washington University Clinic

CANINE SCABIES IN HUMANS
Mervyn L. Elgart, M.D., and Robert S. Higdon, M.D., George Washington University Clinic

LARGE LUMBAR AORTIC ANEURYSMS
John J. Nolan, M.D., Arlington, Va.

EMERGENCY MEDICAL SERVICES IN THE DISTRICT OF COLUMBIA
Harry Zehner, Jr., M.D., Chairman, Committee on Emergency Medical Services, The Medical Society of the District of Columbia

OPERATIVE CULDOSCOPY
Grant P. Bagley, M.D., and Thomas Goodridge, M.D., Washington Hospital Center, Washington; Herbert Likotz, M.D., and Oscar I. Dodek, Jr., M.D., Bethesda, Md.

MEDICAL INDICATION FOR MAMMAPLASTY
Maxine Ann Schurter, M.D., and Gordon Letterman, M.D., Washington

X-RAY CASES OF THE DAY
Harold B. Zimmerman, M.D., J. A. Burwell, M.D., R. M. Allen, M.D., and W. J. Farrell, M.D., Department of Radiology, Fairfax Hospital, Falls Church, Va.

THE PREOPERATIVE EVALUATION OF PANCREATIC LESIONS
Louis Wener, M.D., Charles D. Boyle, M.D., and Masud Homayouni, M.D., Morris Cafritz Memorial Hospital, Washington

DIASTEMATOMYELIA IN THE ADULT
O. Hugh Fulcher, M.D., Section of Neurosurgery, and Homer Twigg, M.D., Department of Radiology, Georgetown University Hospital

Advance Registration

Physicians may register in advance on Monday and Tuesday, September 22 and 23, 8:30 a.m. to 4:45 p.m. at the Medical Society Offices, 2007 Eye Street, N.W. All other registration will be at the Mayflower Hotel.

Badges (provided through the courtesy of Doctors Automated Billing Service) will be issued during Advance Registration and at the Assembly Registration Desk at the Hotel. Admission to the scientific sessions and exhibits is limited to those wearing badges.

PUBLIC SERVICE EXHIBITS

THERMOGRAPHIC EVIDENCE OF THE IMMEDIATE EFFECTS OF CIGARETTE SMOKING ON THE CIRCULATORY SYSTEM
Richard H. Hollenkamp, D. C. Interagency Council on Smoking, Washington, and David Sharp, M.D., National Clearinghouse for Smoking and Health, Arlington, Va.

MEDICAID PAYS FOR SERVICES
Medical Services Administration Social and Rehabilitation Service, U. S. Department of Health, Education, and Welfare

KIDNEY DISEASE IN THE WASHINGTON AREA
Kidney Foundation of the National Capital Area, Washington

PUBLIC EDUCATION CONCERNING EPILEPSY
Epilepsy Foundation of America, Greater Washington, D. C. Area Chapter

THE MISSION OF THE NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES
Robert L. Schreiber, Information Officer, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Md.

SEXUAL ASSAULT ON WOMEN AND GIRLS IN THE DISTRICT OF COLUMBIA
Charles R. Hayman, M.D., Metropolitan Police Department; Associate Director for Preventive Services, D. C. Department of Public Health, Washington

THE MAJOR UNCONTROLLED CANCER—CARCINOMA OF THE BREAST
Ralph Beveridge, American Cancer Society, D. C. Division, Inc., Washington

PROJECT "HOPE"
Christopher Caile, Project Hope, Washington

Acknowledgment

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POLITICAL EDUCATION AND ACTION
William H. Cooper, M.D., Chairman, District of Columbia Political Action Committee, Washington

RARE BLOOD DONOR REGISTRY—AMERICAN RED CROSS BLOOD PROGRAM
Evan C. Stone, M.D., Director, American Red Cross Washington Regional Blood Center, Washington

MEDICINE AND RELIGION
American Medical Association Department of Medicine and Religion, Chicago, and Angelo D'Agostino, S.J., M.D., Clinical Assistant Professor of Psychiatry, Georgetown University School of Medicine

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THE TECHNICAL EXHIBIT

All Exhibits Open Wednesday and Thursday, 9 A.M. to 5 P.M.;
Friday, 9 A.M. to 12 Noon

The following companies have contracted for space in the Technical Exhibit. The Assembly is made possible through the financial assistance of these exhibitors. They have items of interest to display and to discuss with you. A visit to each and every booth is suggested.

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SOCIAL EVENTS

(All Functions at the Mayflower Hotel)

Wednesday, September 24, 1969

ANNUAL SOCIETY LUNCHEON

12 Noon – Colonial Room

Greetings from the American Medical Association by
Gerald Dorman, M.D., *President*

Presentation of Society Awards

Free tickets available for members at Advance Registration or at Assembly Registration Desk

Thursday, September 25, 1969

GEORGETOWN UNIVERSITY MEDICAL ALUMNI LUNCHEON

12 Noon – Grand Ballroom

Tickets available at Alumni Office or at Assembly Registration Desk

GEORGE WASHINGTON UNIVERSITY MEDICAL ALUMNI LUNCHEON

12 Noon – Colonial Room

Tickets available at Alumni Office or at Assembly Registration Desk

WOMAN'S AUXILIARY LUNCHEON

12 Noon – Chinese Room

Tickets available at Advance Registration or at Assembly Registration Desk

DOCTORS' OFFICE STAFF DINNER

Grand Ballroom

6:30 p.m.—Reception

Cocktails, courtesy of Russell, Marsh & Kennedy, Inc.

7:30 p.m.—Dinner

Tickets ($10.00) available at Advance Registration or at Assembly Registration Desk

Friday, September 26, 1969

ANNUAL DINNER DANCE

7:00 p.m.—Reception—Chinese Room

Cocktail Party, courtesy of Peoples Drug Stores

8:00 p.m.—Dinner Dance—Grand Ballroom

Music by Sidney's Orchestra

Tickets ($14.50) available at Advance Registration or at Assembly Registration Desk

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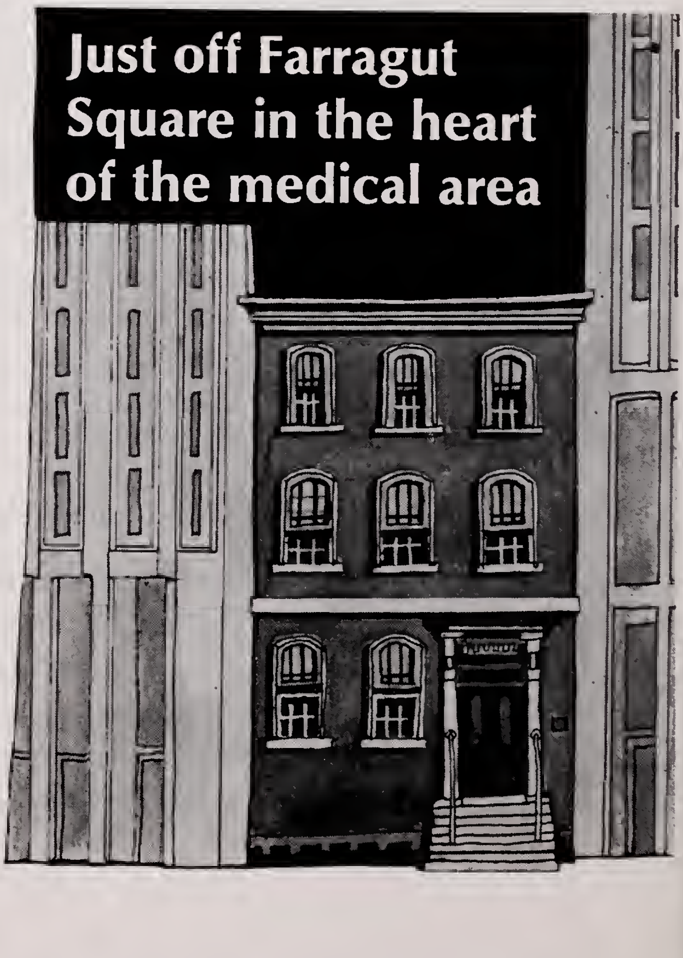
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HEALTH DEPARTMENT NOTES

Gonococcal Ophthalmia Neonatorum in the District of Columbia—Reappearance of an Old Problem

FIVE CONFIRMED CASES of gonococcal conjunctivitis of the newborn were reported to the D. C. Department of Public Health during 1968. All were infants admitted to Children's Hospital of the District of Columbia. In each instance diagnosis was supported by positive smears, cultures, and fermentation tests. In 1 additional case fermentation reactions were inconclusive, but both smear and culture were positive. During the past 10 years Children's Hospital reported only 6 other cases of gonococcal conjunctivitis.

This increase in incidence of gonococcal ophthalmia may be related to the rise in adult gonorrhea. For the year 1968 the District of Columbia had a gonorrheal venereal disease case rate of 1,544 per 100,000 population. This represents a 5.3 per cent increase over 1967 and a 25.7 per cent increase above 1957, and the 1968 case rate is greater than in all but 2 of the larger cities of the United States.

Five of the infants were born in 3 different District hospitals. One infant was born at home but admitted to a District hospital during the first day of life. All patients reportedly received silver nitrate prophylaxis and 3 received topical antibiotic therapy prior to admission. The incubation period varied from 3 to 8 days. The average age at admission to Children's Hospital was 12 days. However, 1 child was admitted 28 days after birth. Fortunately, all of the cases were mild.

Five of the 6 mothers had received some prenatal care. The mother or father of 3 of the infants had gonorrhea diagnosed during the time of pregnancy. All 3 parents were treated during the pregnancies and 1 mother was shown to have a negative antenatal culture. The parents of a fourth child had discharges during the pregnancy but went undiagnosed and untreated. Two sets of parents were asymptomatic prior to the time of delivery.

It is possible that most cases of gonorrheal ophthalmia are not reported and those from Children's Hospital may represent only a small portion of actual cases. Despite recent medical advances the ancient and ubiquitous gonococcus still flourishes. The disease defies control for several reasons. It has a short incubation period (3–5 days), it is frequently asymptomatic in females, the moral standards of the population are probably changing, some strains of the gonococcus are developing relative resistance to penicillin, and the gonococcus has low antigenicity, which accounts for the lack of immunity, the absence of a preventive vaccine, and the difficulty in developing a serologic test for infected individuals.

What can be done to control this complication of gonococcal ophthalmia? There are several practical approaches to this problem. The most effective method is to obtain cultures from patients receiving prenatal care. Such cultures should be taken in late pregnancy and are preferably planted on Thayer-Martin media. Infected individuals should be treated prior to delivery with 4.8 million units of procaine penicillin G in aqueous suspension given at one time. Patients sensitive to penicillin may be treated with tetracycline, 500 mg. 4 times a day for a total of 3 grams. All women with positive cultures must be reported to the D. C. Department of Public Health so that the source and spread of infection may be determined. Infected sexual partners

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must also be treated to prevent reinfection of the mother later in pregnancy.

The technique of silver nitrate instillation (mandatory in the District of Columbia) should be reviewed periodically in District hospitals with delivery services.

Finally, eye discharges in newborns should arouse immediate concern. Smears and cultures should be taken routinely in all such cases, and if gonococci are found, adequate systemic and topical antibiotic treatment should be given. Infants with gonorrheal ophthalmia must by law be reported within 48 hours to the District Health Department so that appropriate epidemiological investigations may be undertaken.

MURRAY GRANT, M.D., D.P.H.
D.C. Director of Public Health

NEW MEMBERS

Active

NORMAN ROGERS, M.D. Office: Freedmen's Hospital. Born in Cairo, Ga. Medical degree: Howard University, 1963. Specialty: General Surgery.

EVAN CLIFFORD STONE, JR., M D. Office: 2025 E Street, N.W. Born in Balfour, N.D. Medical degree: Temple University, 1929. Specialty: General Practice.

Associate

CARLOS NUNES ALMEIDA, M.D. Office: Glenn Dale Hospital, Glenn Dale, Md. Born in Coimbra, Portugal. Medical degree: Coimbra University, 1959. Specialty: Thoracic and General Surgery.

GILBERT DAVID GROSSMAN, M.D. Office: Georgetown University Hospital. Born in Maplewood, N.J. Medical degree: Emory University, 1962. Specialty: Internal Medicine.

JONAS COHEN KOLKER, M.D. Office: 4108 Leland Street, Chevy Chase, Md. Born in Baltimore, Md. Medical degree: University of Maryland, 1955. Specialty: Psychiatry.

ANDRE LOUIS LAZ, M.D. Office: 9401 Indian Head Highway, Oxon Hill, Md. Born in New York, N.Y. Medical degree: New Jersey College of Medicine, 1962. Specialty: Internal Medicine.

JOSE RAFAEL ORTIZ, M.D. Office: F16 Glenview Gardens, Ponce, Puerto Rico. Born in Puerto Rico. Medical degree: Guadalajara University, 1967. Specialty: General Practice.

Resident-Intern

WILLIAM E. LIGHTFOOTE II, M.D. Office: Veterans Administration Hospital. Born in Tuskegee, Ala. Medical degree: Howard University, 1967. Specialty: Internal Medicine.

CORRESPONDENCE

CHICAGO, ILLINOIS, May 29, 1969

TO RAYMOND T. HOLDEN, M.D.,
WASHINGTON, D. C.

I have just returned from New Haven and the Beaumont Medical Club Meeting to hear about plans for William Beaumont whose influence touched Washington in several ways.

The state of Connecticut legislature has just passed a resolution recommending to the Postmaster General that a commemorative stamp be issued in honor of William Beaumont. Since this doesn't happen to many doctors, everyone who has any influence in Congress should get behind it.

Equally significant or more important is the sad state of the homestead in Lebanon, Connecticut, where he spent his early years. There is some question about this being his birthplace, but there is no question that he lived in this Connecticut farmhouse for many years.

The house is in a sad state of repair and is owned by an aged chicken farmer. The Historical Society of Lebanon has reserved a spot on the Lebanon Green if and when it can be purchased from the farmer, who wants at least $20,000. Then it must be moved to the Green and restored.

I appeal to you for advice as to whether anything can be done by the Washington, D. C. Medical Society as individuals or collectively to support these programs, especially the purchase and the restoration of the home.

Any correspondence concerning this will be immediately conveyed to Dr. Spiro,* President of the Beaumont Medical Club, and Dr. Riesman,† Chairman of the Restoration Committee of the Beaumont Medical Club, New Haven.

I know you will have some suggestions.

JOHN H. TALBOTT, M.D.
Editor, The Journal of the
American Medical Association

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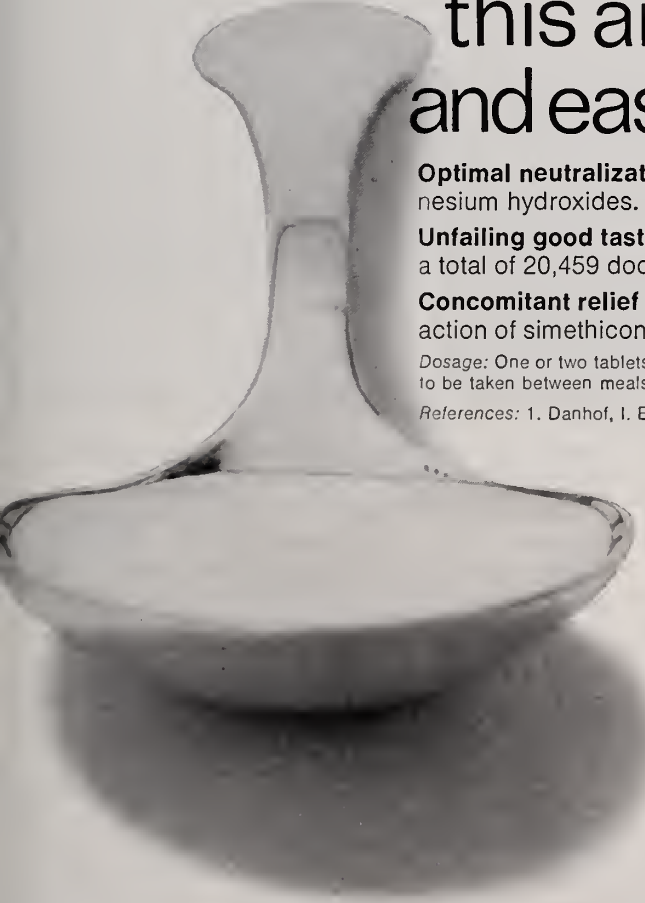
* Address: Dr. Howard Spiro, 789 Howard Avenue, New Haven, Conn. 06510.

† Address: Dr. John P. Riesman, 2 Church Street South, New Haven, Conn. 06519.



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Concomitant relief of G. I. gas distress—provided by the proven antiflatulent action of simethicone.[2]

Dosage: One or two tablets (well chewed or allowed to dissolve in the mouth); one or two teaspoonfuls to be taken between meals and at bedtime, or as directed by physician.

References: 1. Danhof, I. E.: Report on file. 2. Hoon, J. R.: Arch. Surg. *93*:467 (Sept.) 1966.

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Policy Statement on Closed Chest Cardiopulmonary Resuscitation and Defibrillation by Nurses*

Whereas, It is recognized that qualified nurses in the District of Columbia have been initiating closed cardiopulmonary resuscitation and defibrillating by external electric countershock, and

Whereas, It is recognized that closed cardiopulmonary resuscitation and defibrillation by external electric countershock are emergency life-saving measures which must be initiated appropriately and immediately, and

Whereas, Because of the law and its interpretations there have been years of inconclusive discussion concerning the nurse's legal right to perform closed cardiopulmonary resuscitation and defibrillation by external electric countershock; therefore,

With the objective of protecting the patient, the doctor, the nurse, and the hospital or agency, the Medical Society of the District of Columbia, the Hospital Council of the National Capital Area, Inc., and the District of Columbia Nurses' Association acknowledge that it is proper practice and sound procedure for licensed professional nurses to initiate closed chest cardiopulmonary resuscitation and to defibrillate by external electric countershock if all the criteria set forth below are met:

1. The nurse has knowledge of the procedures, knows the criteria for performance, has demonstrated competence and skill in carrying out the procedures, and

2. The nurse performs the authorized procedures upon:
   - (a) The direct order of a licensed doctor of medicine, or
   - (b) Pursuant to standing procedures established as set forth in item 5 following.

3. Where the procedures are to be performed in a hospital or any other organized health agency, they must be performed within the framework of regulations established by a committee composed of authorized representatives from administration, medical staff, and nursing service. This committee will have the responsibility for written statement, publication, and periodic revision of the policies. These policies are to be made available to the entire medical and nursing staff.

4. It is the jurisdiction of that committee in a hospital or organized health agency to:
   - (a) Decide if the nurses in the hospital or agency may perform closed chest cardiopulmonary resuscitation and/or defibrillation by external countershock.
   - (b) Delineate the specific procedures that can be performed, the equipment that can be used, and the circumstances in which the procedures may be performed.
   - (c) Determine the content of proper instruction and extent of supervised practice required.
   - (d) Establish in-service teaching and supervised practice of the procedures for all nurses who will be required to perform the procedure.
   - (e) Publish a roster, maintained in current accuracy, of those nurses who have successfully completed the required instructions and practice and are qualified to perform the procedures.

5. The criteria established by the committee shall make provision that in the case of a cardiac emergency a licensed physician and other designated categories of personnel are to be immediately summoned to assist the registered nurse who is carrying out standing procedures established by the medical staff of the hospital and contained in the adopted criteria.

It is hereby recommended that consideration be given by the professional nursing schools to include the teaching of these procedures in the curriculum.

Addenda: All nurses should be aware that any statement of policy made by professional organizations or by an employing agency does not relieve the individual nurse of the responsibility for her own acts and that the nurse is liable for her own acts if she is negligent. However, this statement of policy will provide the nurse with guidelines by setting forth specific information which these responsible groups recognize as proper practice and sound procedure.

It is recognized that the final decision in any interpretation of the law is the jurisdiction of our courts.

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* This joint statement on closed chest cardiopulmonary resuscitation and defibrillation by licensed professional nurses practicing in the District of Columbia, prepared by the Medical Society of the District of Columbia, the Hospital Council of the National Capital Area, Inc., and the District of Columbia Nurses' Association, was approved by the Executive Board of the Medical Society of the District of Columbia at its meeting, April 22, 1968.

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Monilia emerging as a major therapeutic problem—

cent studies report increased incidence, attributed in part to the use of oral ntraceptives,[1-4] broad-spectrum antibiotics[5-9] and prolonged use of corticosteroids.[7]

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ntraindications: Known sensitivity to sulfonides.

cautions/Adverse Reactions: The usual precauns for topical and systemic sulfonamides ould be observed because of the possibility of sorption. Burning, increased local discomfort, n rash, urticaria or other manifestations of fonamide toxicity are reasons to discontinue atment.

sage: One applicatorful or one suppository invaginally once or twice daily.

pplied: Cream—Four-ounce tube with or witht applicator Suppositories—Box of 12 with plicator.

ferences: 1. Gardner, H. L.: J. Miss. M.A. 8:529, 67. 2. Porter, P. S., and Lyle, J. S.: Arch. rmat. 93·402, 1966. 3. Walsh, H.; Hildebrandt, J., and Prystowsky, H.: Am. J. Obst. & Gynec. 93:904, 1965. 4. Vaginitis and the Pill: J.A.M.A. 196:731, 1966. 5. Guerriero, W. F.: South. M.J. 56:390, 1963. 6. Seelig, M. S.: Am. J. Med. 40:887, 1966. 7. To-day's Drugs, New York, Grune & Stratton, Inc., 1965, p. 316. 8. Gray, L. A., and Barnes, M. L.: Am. J. Obst. & Gynec. 92:125, 1965. 9. Salerno, L. J.; Ortiz, G., and Turkel, V.: Vaginitis: A Diagnostic and Therapeutic Approach, Scientific Exhibit, presented at the 115th Annual A.M.A. Convention, Chicago, Illinois, June 1966. 10. Walsh, J. C.; Sheffery, J. B., and Wilson, T. A.: Med. Ann. D.C. 37:358, 1968. 11. Nugent, F. B., and Myers, J. E.: Pennsylvania Med. 69:44, 1966.

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DOUBLE STRENGTH

Proteolytic enzyme therapy specifically indicated for the rapid resolution of inflammation and edema as adjunctive therapy in accidental and surgical trauma.

1 tablet q.i.d. provides recommended therapeutic dose at lower cost.

A FULL DAY'S DOSAGE

Description: ORENZYME BITABS offers the therapeutic effects of trypsin in an oral form as adjunctive therapy for the rapid resolution of inflammation and edema. ORENZYME BITABS is convenient to use, promotes patient cooperation and is ideally suited for maintenance therapy following parenteral trypsin.

Indications: When used as adjunctive therapy for the rapid resolution of inflammation and edema, good results have been obtained in:

☐ Accidental Trauma

☐ Postoperative Tissue Reactions.

Other conventional measures of treatment should be used as indicated. In infection, appropriate anti-infective therapy should be given.

Contraindications: ORENZYME BITABS should not be given to patients with a known sensitivity to trypsin or chymotrypsin.

Precautions: It should be used with caution in patients with abnormality of the blood clotting mechanism such as hemophilia, or with severe hepatic or renal disease. Safe use in pregnancy has not been established.

Adverse Reactions: Adverse reactions with ORENZYME have been reported infrequently. Reports include allergic manifestations (rash, urticaria, itching), gastrointestinal upset and increased speed of dissolution of animal-origin surgical sutures. There have been isolated reports of anaphylactic shock, albuminuria and hematuria. Increased tendency to bleed has also been reported but, in controlled studies, it has been seen with equal incidence in placebo-treated groups. (See Precautions.) It is recommended that if side effects occur medication be discontinued.

Dosage: One tablet q.i.d.

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News & Personals

Summary of Executive Board Actions

Proceedings of June 23 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Thomas M. Arnett, Robert J. Coffey, Henry D. Ecker, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary.

The meeting was called to order by Dr. Wilner at 7:20 p.m.

The minutes of the May 26, 1969 meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

May 26 Medicolegal Committee
June 3 Finance Committee
4 Society Insurance Committee
4 Fee Review Committee
5 Colon and Rectal Cancer Study Committee
5 Physician Placement Committee
9 Committee on Environmental Health
10 Board of Credentials
10 Medicolegal Committee
12 Traffic Committee
13 Committee on Public Information
17 Grievance Committee

Board of Credentials: On recommendation of the Board of Credentials, 2 applicants were elected to Active membership, 5 to Associate membership, and 1 to Resident-Intern membership. Their names appear on page 464. Approval was given to the following changes in membership status:

Transfers

Active to Associate: Harry N. Carlton, Peter C. Luchsinger, John B. MacGregor, Andrew Stanley Tegeris and William B. Yowell.

Society Insurance Committee: The Board approved the recommendation of this committee to accept the increased rates proposed by Blue Cross/Blue Shield for membership coverage.

AMPAC/DOCPAC: Dr. Blair J. Henningsgaard and Dr. William H. Cooper joined the meeting for a presentation of AMPAC/DOCPAC activities and their effectiveness in the last election. Both physicians stressed that membership is still below the potential. Dr. Cooper thought that joint billing had helped locally but that DOCPAC still has not achieved its goal for this year. Dr. Henningsgaard briefly reviewed AMPAC's history for the past 8 years and gave statistical data relating to its effectiveness.

Pharmaceutical Services in Hospitals: The document, "Suggested Principles and Guidelines for Pharmaceutical Services in Hospitals in Maryland, District of Columbia and Delaware," was approved and endorsed as submitted with the request that a letter of commendation be forwarded to Dr. Lawrence E. Putnam for his excellent contributions and labors in its preparation.

Relative Value Study Committee: It was voted to approve the recommendations of the Relative Value Study Committee on a new unit value for peritoneoscopy and to reinstate the unit value for a complete blood count to 1.0.

RMP Activities: The Board accepted for information Dr. Arthur E. Wentz's report on the activities of the Regional Medical Program. It also agreed to sponsor the luncheons to be held in conjunction with the forthcoming RMP Workshops.

Nominees for AMA Councils and Committees: The Executive Secretary reminded the Board that any nominees for AMA Councils and Committees must be submitted to the AMA no later than August 4.

Study of Cancer of the Breast: Approval was given to the request of the Cancer Study Committee that the study of cancer be continued on a new cancer site, specifically, cancer of the breast.

MEETINGS, SEMINARS in refreshing country-estate atmosphere. Now booking groups of 30 to 60 currently; up to 300 for late 1969, 1970. Golf. Mixed Beverage License. Reservations, brochure, call (in D.C.) 293-5350.

THE BOAR'S HEAD INN
Charlottesville, Virginia

Other Business

1. Dr. Raymond T. Holden, in a letter of June 12 addressed to the Chairman of the Board, had forwarded a copy of a letter of May 29, 1969, from Dr. John H. Talbott, Editor of JAMA (see Correspondence, page 464), asking Dr. Holden to try to secure Medical Society support of the purchase and restoration of the boyhood home of Dr. William Beaumont. After some discussion the Board voted to send Dr. Holden a letter approving the honor to Dr. Beaumont and stating that the membership will be advised of the project so that individual contributions can be made for that purpose.

2. President Bacon reported that Dr. Zigmond M. Lebensohn will serve on the President's Committee to evaluate the proposal that the administration of St. Elizabeths Hospital be transferred from the National Institute of Mental Health to the District of Columbia Department of Public Health.

3. Mr. Sadler reported that a group of 45 physicians from the German Medical Association will visit Washington in October. They have requested the Medical Society to sponsor a 2-hour postgraduate seminar on current medical practice in the United States. Mr. Sadler is working with Dr. Howard E. Ticktin on such a program.

There being no other business, the meeting was adjourned at 10:45 p.m.

MEETINGS

More than 3,000 scientists from 24 countries are expected to attend the **Eighth International Congress of Gerontology**, August 24–29, at the Sheraton-Park and Shoreham Hotels in Washington. Held every 3 years in one of the 29 member-countries of the International Association of Gerontology, the Congress brings together outstanding professionals in gerontology and allied fields for an exchange of ideas and knowledge relating to aging studies and the problems of the aged. A more detailed announcement of this meeting appeared in the July ANNALS.

"Current Concepts in Medicine," a Postgraduate Course in Internal Medicine, will be offered for the first time by the **National Naval Medical Center** at the Naval Hospital in Bethesda, Md., September 18 and 19, under the direction of Captain L. M. Fox, MC, USN, Chief of the Medicine Service, and Captain W. M. Lukash, MC, USN, Head of the Gastroenterology Clinic and Research Branch. Eminent guests and consultants from the Army, the Veterans Administration, the National Institutes of Health, and nearby medical schools will participate in the program.

Attendance is open to civilian internists and Armed Services medical officers interested in internal medicine or preparing for Boards. Reserve naval medical officers will receive retirement point credit for attendance.

Advance registration for the course is required by August 27. Registration forms may be obtained by writing "Current Concepts in Medicine," Medicine Service, Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

Georgetown University announces its **Fifth Annual Symposium on Family Psychotherapy**, to be held at the Medical Center, October 17 and 18. Further information may be secured by writing to Dr. Francis D. Andres, 3710 Chanel Road, Annandale, Va. 22008.

►GENERAL NEWS

The U.S. Agency for International Development has requested the American Medical Association to continue its administration of the **Volunteer Physicians for Viet Nam** program for an additional 2 years. To maintain 32 physicians in Viet Nam until June 1971 will require an additional 400 volunteers. The greatest need is for general practitioners, general surgeons, internists, orthopedic surgeons, pediatricians and preventative medicine specialists. Interested physicians should contact the Director, Volunteer Physicians for Viet Nam Program, AMA, 535 North Dearborn Street, Chicago, Ill. 60610.

Dr. Wallace N. Jensen, formerly Professor of Medicine and Vice Chairman of the Department of Medicine at Ohio State University, became the new **Professor and Chairman of the Department of Medicine at George Washington University,** July 1. He succeeds Dr. Thomas McP. Brown, who will continue as Eugene Meyer Professor of Medicine and focus his major efforts in his specialty of arthritis and rheumatoid diseases.

Dr. Jensen is a 1945 graduate of the University of Utah School of Medicine. From 1953 to 1955 he was a member of the Department of Medicine at Duke University Medical Center under Dr. Eugene Stead, and from 1955 to 1967 he headed the Division of Hematology at the University of Pittsburgh School of Medicine. He is consultant to the National Institutes of Health, the Food and Drug Administration, National Aeronautics and Space Administration, and the Veterans Administration.

Another top post at **George Washington University Medical Center** was filled, July 1, when **Mr. Clarence A. Lowe** became **Associate Dean for Research.** Mr. Lowe has had a distinguished career in the Public Health Service where he was Assistant Director for Policy and Procedures, Division of Grants and Contracts, Health Services and Mental Health Administration. He has served most recently as Assistant Dean for Administration, Harvard School of Dental Medicine.

In his new post he will be responsible for programs of research and training, liaison with funding agencies, and will give assistance to the medical faculty in reviewing individual and departmental research efforts. He will also represent the Medical Center in research programs conducted by GW faculty members working in University-affiliated institutions.

Mr. Matthew F. McNulty, Jr., of Bethesda, Md. has been named **Vice President of the Georgetown University Medical Center.** He succeeds the Rev. Mark H. Bauer, S.J., who has been Vice President of the Center since 1963.

Mr. McNulty, who assumed his new position, July 15, has been Director of the Council of Teaching Hospitals and Associate Director of the Association of American Medical Colleges. He graduated from St. Peter's College, Jersey City, N. J., in 1938 with a Bachelor of Science degree in physical science and philosophy. He later received a Master's degree in hospital administration from Northwestern University and a Master's in health care administration from the University of North Carolina.

During 5 years of military service during World War II he carried out administrative assignments for the Medical Department of the Air Force. Following the War he assisted in the development of the now Nation-wide system of Medical School-Veterans Administration Teaching Hospital partnership. He was Assistant Director of Medical Administration for the VA in the Chicago area and subsequently Director of Medical Administration for the Washington, D.C. area.

Dr. Alfred Soffer assumed the position of **Executive Director of the American College of Chest Physicians** on July 15. He succeeds Mr. Murray Kornfeld, Executive Director since the founding of the College in 1935.

A Fellow of the College since 1960, Dr. Soffer has been Editor-in-Chief of *Diseases of the Chest* since July 1, 1968 and Director of Scientific Activities of the College since November 1967. A graduate of the University of Wisconsin School of Medicine, he is a diplomate of the American Board of Internal Medicine and a Fellow of the American College of Cardiology. He served for 6 years as a Senior Editor of the *Journal of the American Medical Association.*

Mr. Kornfeld will continue to serve the College as Executive Trustee.

The Rheumatism Society of the District of Columbia held its annual meeting, May 21, at George Washington University Hospital. Officers elected for 1969–70 are as follows:

Dr. William E. Reefe, *President;* Dr. Ronald Lamont-Havers, *Vice President;* and Dr. Henry Roth, *Secretary-Treasurer.*

Convalescing . . . but still a long way to go. Anxiety can make it even longer.

Convalescence following medical or surgical procedures may be almost endless to an anxious patient. And, indeed, anxiety with some patients actually retards progress—for example, by inducing insomnia and reducing cooperation.

As physicians have found during nearly 15 years of widespread use, Equanil may be a beneficial part of aftercare. It helps relieve anxiety and tension, thus often aiding your primary therapy.

Indications: For use in management of anxiety and tension occurring alone or as accompanying symptom complex to medical and surgical disorders and procedures. Though not a hypnotic, fosters normal sleep through antianxiety and related muscle-relaxant properties.

Contraindications: History of sensitivity to meprobamate.

Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® [strip pack], Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

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At the meeting of the **Board of Directors of the Medical Service of the District of Columbia**, May 28, Dr. Jack Kleh was elected Chairman; Dr. Philip H. Philbin, Vice Chairman; and Mr. Frederick Dorn, Secretary.

Mr. George B. McGovern, President of Medical Service, was reëlected to that post. Also reelected were Mr. Douglas R. Smith, Treasurer; Miss Nancy M. Brewer, Assistant Secretary; and Mr. J. Russell Bolton and Mr. Nelson J. Foster, Assistant Treasurers. Mr. Dayton M. Selby was elected an Assistant Secretary.

Four new trustees were elected to the Board for 3-year terms. They are Dr. John A. Kenney, representing the Medical Society of the District of Columbia; Dr. Howard P. Treichler, representing the Fairfax County (Virginia) Medical Society; Dr. John W. Cashman, Assistant Surgeon General, Public Health Service; and Mr. William H. McGee, President of McGee and Company, Inc.

Reëlected Trustees for 3-year terms were Dr. Charles E. Bickham, Jr., Dr. Edward W. Nicklas, and Dr. Leonard Elstad, President of Gallaudet College.

Dr. George E. Schreiner assumed the **presidency of the Washington Heart Association** at its annual meeting, June 16. The new head of the Association is Professor of Medicine at Georgetown University School of Medicine and Director of the Renal and Electrolyte Division of Georgetown Hospital.

Dr. George A. Kelser, Jr. was elected Vice President; Mr. John E. Sumter, Jr., Treasurer; Mr. Kenneth Birgfeld, Assistant Treasurer; and Mr. Wesley S. Williams, Secretary.

Elected President-elect is Mr. William T. Hannan, a partner in the law firm of Hannan, Castiello & Berlow. He has served as legal counsel to the Association and has been a member of its Board of Directors since 1952. He will take office in 1970.

The D. C. Division of the American Cancer Society has awarded summer scholarships to 15 outstanding District of Columbia high school students, who will study at one of 4 area research laboratories, namely, Armed Forces Institute of Pathology, Walter Reed Army Institute of Research, Howard University College of Medicine, and George Washington University School of Medicine. The students began their 6-week assignments, July 1, and will receive a stipend of $200 each.

The winners were selected from 97 applicants recommended by principals of public, private and parochial schools in the District of Columbia. The final selection was made through personal interviews with a volunteer selection committee under the chairmanship of Dr. Lois I. Platt, Associate Professor of Pathology at George Washington University.

The scholarship winners were Susan Garges, Bruno Giordani, Sherry Beyer, Cathy Jenkins, Michelle Clark, Jo Ann Rosenfeld, Frank Doran, Barbara Borrell, David Hardin, Ann Greif, Mary Beth Palmer, Lane Walsh, Cecily Rock, David Adams, and Gary Frazier. They represent the following institutions: Immaculata Preparatory School, St. Anselm's Abbey School, Georgetown Visitation Preparatory School, St. Anthony's High School, Sidwell Friends School, Archbishop Carroll High School, Immaculate Conception Academy, Gonzaga High School, and National Cathedral School for Girls.

The Woman's Auxiliary to the Medical Society of the District of Columbia has elected the following officers for 1969–70.

President-elect: Mrs. Charles V. Pate
First Vice President: Mrs. Richard H. Spire
Second Vice President: Mrs. George W. Hyatt
Recording Secretary: Mrs. Arthur G. Kreischer
Assistant Recording Secretary: Mrs. Kenneth A. Grigg
Corresponding Secretary: Mrs. Harry A. Horstmann, Jr.
Assistant Corresponding Secretary: Mrs. George T. Economos
Treasurer: Mrs. Robert B. Havell
Assistant Treasurer: Mrs. Robert B. Irey

Mrs. Raymond A. Osbourn, President-elect during the past year, is the new President of the Auxiliary.

The S. S. Hope sails for Tunisia late this month for a 10-month stay, marking her first return to the African continent since the hospital ship's voyage to Guinea in 1964. The selection of Tunisia as the next port of call for the *S.S. Hope* was made, according to Dr. William B. Walsh, founder and President of Project HOPE, on the basis of advance medical survey team reports and the "warm invitation" of the Government.

The HOPE medical staff will place great emphasis on working with Tunisian medical students, interns, and residents. Educational exchange programs will be conducted in medicine, dentistry, nursing, public health, medical technology, pharmacy, and other paramedical specialties.

PERSONALS

Dr. Alec Horwitz is described as "a physician and surgeon of outstanding ability and a dedicated teacher" in *The Washington Circle*, the 1969 yearbook of George Washington University School of Medicine. The Class of 1969 wrote of him:

> "While Dr. Alec Horwitz' surgical excellence is well known, it is not for this alone that we dedicate our yearbook to him. On morning and afternoon rounds, in the operating room, or in conference, he is always a teacher—informative, thought-provoking, and controversial, and it is for these qualities that he earns our admiration."

Dr. Horwitz, faculty member, honored by GW Class of 1969

Dr. Horwitz, who is Clinical Professor of Surgery, received his medical degree from George Washington University in 1923. After interning in Baltimore he became a Fellow in Surgery at Mayo Clinic in Rochester, Minn., and later, First Assistant to Dr. William J. Mayo. He also earned his M.S. in Surgery at the University of Minnesota. Returning to Washington, he served for 18 years as Chief of the Surgical Service of George Washington University at D. C. General Hospital. In addition to his teaching duties, he maintains an extensive private practice.

Dr. Raymond T. Holden, a member of the Board of Trustees of the American Medical Association, has been appointed to the AMA Committee on Health Care of the Poor, representing the Board of Trustees. The Committee held its first meeting, June 30, in Chicago.

Dr. Richard D. Bauer, of Adelphi, Md., has succeeded Dr. Saul Schwartzbach as President of the Medical Staff of Prince George's General Hospital, Cheverly, Md. Dr. Bauer is Past President of both the Medical and Chirurgical Faculty of Maryland and of the Prince George's County (Md.) Medical Society.

Dr. William B. Hagan, of Riverdale, Md., was named to the Executive Committee of the Staff. Dr. Hagan and Dr. Bauer are Associate members of the D. C. Medical Society.

Dr. Yuill Black, allergist in the District of Columbia and Northern Virginia, won the annual public speaking contest for District 36 of Toastmasters International. District 36 includes Northern Virginia, Washington, D.C., and Maryland, and comprises 93 clubs with over 2,000 members.

OBITUARIES

Sam Chapman Pascoe, M.D.

(1924–1969)

Dr. Sam C. Pascoe, internist and cardiologist, with offices in the Seven Corners Medical Building, Falls Church, Va., died from drowning at Freestone Point, Md., near Dunfries, Va., May 18, 1969. He lived at 2006 Bradford Avenue, Annandale, Va.

Dr. Pascoe was born in Chicago, Ill., December 14, 1924. He received his A.B. degree from Vanderbilt University in 1946 and his medical degree from Vanderbilt School of Medicine in 1950. He came to Washington to intern for a year at George Washington University Hospital.

Following his internship Dr. Pascoe was on active duty with the U. S. Army for 17 months and continued in the Medical Reserve Corps for 2 years. He had served earlier, from 1942 to 1945, as an ensign in the U. S. Navy.

After his military service he began training in his special field, internal medicine. He was a resident physician at George Washington Hospital from 1952 to 1953, and also trained for a year at D. C. General Hospital and for 2 years at Mt. Alto Veterans Hospital.

Dr. Pascoe was on the hospital staffs of George Washington University, Georgetown University, and Arlington Hospitals. At the time of his death he was Assistant Clinical Professor of Medicine at George Washington University.

Dr. Pascoe was elected a Resident-Intern member of the Medical Society of the District of Columbia in 1953 and an Active member in 1954.

PHYSICIANS' PLACEMENT SERVICE

The Medical Society's **Physicians' Placement Committee** maintains a service to benefit its members and other physicians by locating suitable openings, assistants or associates. It will also assist Government agencies and industrial organizations to secure physicians for their Medical Departments. Call 223-2230—ask for Placement Service.

He was a member of the American Medical Association, the American Federation for Clinical Research, the Washington Heart Association, the Northern Virginia Heart Association, and an associate member of the Virginia Medical Society, the Fairfax County Medical Society, and the Arlington County Medical Society.

He leaves his wife, Mrs. Patricia Rasmussen Pascoe, and 3 sons, Tommy, John and Sam, Jr. His mother, Mrs. Sam B. Pascoe, of Bowling Green, Ky., and a sister, Miss Shirley Pascoe, of New York City, survive him.

Bleeding Leiomyoma of Duodenum—Rivera et al

(*Continued from page 430*)

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Coronary Arteriography—Kemp and Gorlin

(*Continued from page 432*)

a patient in the coronary age-group depends upon the ease with which the particular laboratory can perform coronary arteriography. If experienced personnel are available it can add very helpful information at a negligible additional risk to the patient. Left-heart catheterization of a patient with suspected cardiomyopathy is an excellent case in point.

Every diagnostic procedure must be evaluated in the light of the accuracy of the information it yields. When one views coronary arteriography of excellent radiographic quality, a highly accurate picture of the major coronary vessels and their branches has been obtained. A study comparing the interpretation of coronary arteriography with the actual amount of disease found at necropsy done on 29 subjects at the Peter Bent Brigham Hospital confirmed this impression. Of the many opportunities for error in interpreting 145 coronary arteries individually, only 3 errors of functional significance were made. There was a direct relationship between the accuracy of interpretation and the radiographic quality of the arteriography, with significant errors being made only in films of borderline quality.

A number of factors contribute to radiographic quality, most of which are of a technical nature and are not germane to the present discussion. Appropriate magnification, contrast, focus, and day-to-day consistency are essential and most often found in a laboratory with a high degree of interest in an almost daily use of coronary arteriography.

Clinicopathologic Conference

(*Continued from page 445*)

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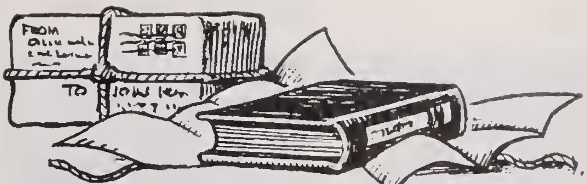

Books Received

American Academy of Orthopaedic Surgeons: Symposium on the Spine, Cleveland, Ohio, November 1967. Price, $19.50. Pp. 289, with 558 illustrations. St. Louis: Mosby, 1969.

American Academy of Orthopaedic Surgeons: Symposium on Sports Medicine, Oklahoma City, August 1967. Price, $15.00. Pp. 217, with 199 illustrations. St. Louis: Mosby, 1969.

Ptosis. CROWELL BEARD, M.D. Price, $22.50. Pp. 241, with 714 illustrations. Medical illustrations: Joan Esperson. Photographic editing and printing: Diane Beeston. St. Louis: Mosby, 1969.

System of Ophthalmology. Vol. IV. The Physiology of the Eye and of Vision. Edited by SIR STEWART DUKE-ELDER, G.C.V.O., F.R.S. Price, $39.50. Pp. 734, with 317 illustrations and 1 colored plate. St. Louis: Mosby, 1968.

Organization and Administration of Health Care: Theory, Practice, Environment. RICHARD L. DURBIN, M.B.A., M.P.A., AND HERBERT W. SPRINGALL, M.P.H. Price, $9.85. Pp. 248, with 51 illustrations. St. Louis: Mosby, 1969.

Post-Traumatic Pulmonary Insufficiency: Pathophysiology of Respiratory Failure and Principles of Respiratory Care after Surgical Operations, Trauma, Hemorrhage, Burns, and Shock. FRANCIS D. MOORE, M.D., JOHN H. LYONS, JR., M.D., ELLISON C. PIERCE, JR., M.D., ALFRED P. MORGAN, JR., M.D., PHILIP A. DRINKER, PH.D., JOHN D. MACARTHUR, M.D., AND GUSTAVE J. DAMMIN, M.D. The Departments of Surgery and Pathology of the Harvard Medical School at the Peter Bent Brigham Hospital, Boston, Mass. Price, $12.50. Pp. 234, with 125 illustrations. Philadelphia: Saunders, 1969.

Genetics and Counseling in Medical Practice. LEONARD E. REISMAN, M.D., AND ADAM P. MATHENY, JR., PH.D. Price, $12.75. Pp. 215, with 86 illustrations. St. Louis: Mosby, 1969.

Introduction to Acid-Base and Electrolyte Balance, 5th ed. GÖSTA ROOTH. Price (paper), $3.50. Pp. 80. New York: Barnes & Noble, 1969.

Lung Cancer: A Study of Five Thousand Memorial Hospital Cases. Edited by WILLIAM L. WATSON, M.D. Price, $29.50. Pp. 584, with 454 illustrations, including 6 color plates. St. Louis: Mosby, 1968.

Introduction to Medical Science. CLARA GENE YOUNG AND JAMES D. BARGER, M.D., F.A.C.P. Price, $7.95. Pp. 295, illustrated. St. Louis, Mosby, 1969.

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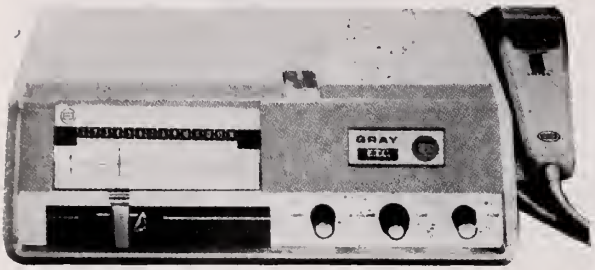

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Health Appraisal of School Children, 4th ed. Emphasizes the need for coöperation among parents, the private physician and the schools in setting standards for determining the health status of school children. 33 pp. Price, $1.00. Code OP-187.

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Health Quackery—Cancer. Lists the 7 warning signs of cancer and describes various unproven cancer "remedies." Price, 15 cents.

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August 24–29: International Congress of Gerontology. Sheraton-Park Hotel, Washington. Address: Secretary, International Congress of Gerontology, 9650 Rockville Pike, Bethesda, Md. 20014.

September 4–6: American Association of Obstetrics and Gynecology. The Homestead, Hot Springs, Va. Address: Dr. Robert B. Wilson, Secretary, 200 First Street, S.W., Rochester, Minn. 55901.

September 5–7: Tidewater Heart Association. Williamsburg Lodge and Conference Center, Williamsburg, Va. Address: Tenth Annual CV Symposium, Tidewater Heart Association, 523 Boush Street, Norfolk, Va. 23510.

September 14–17: Association of Medical Illustrators. Washington Hilton Hotel, Washington. Address: Association of Medical Illustrators '69 Meeting, P.O. Box M507, Washington, D. C. 20012.

September 14–20: College of American Pathologists. Palmer House, Chicago. Address: Mr. Oliver J. Neibel, Jr., Executive Director, 230 North Michigan Ave., Chicago, Ill. 60601.

September 15–16: Congress on Occupational Health. Stouffer Riverfront Inn, St. Louis, Mo. Address: AMA Department of Occupational Health, 535 North Dearborn Street, Chicago, Ill. 60610.

September 16–20: Congress of Neurological Surgeons. Sheraton-Boston Hotel, Boston. Address: Dr. Bernard S. Patrick, Secretary, University Medical Center, Jackson, Miss. 39216.

September 18–21: American Medical Writers Association. Sheraton Hotel, Philadelphia. Address: Mr. W. Wayne Curtis, Executive Secretary, 420 Lexington Avenue, New York, N. Y. 10017.

September 20–27: World Congresses of Neurological Sciences. New York Hilton Hotel, New York. Address: World Congresses of Neurological Sciences, 420 Lexington Ave., Suite 417, New York, N. Y. 10017.

September 21–24: American Association of Medical Clinics. The Americana Hotel, New York. Address: Dr. Edward M. Wurzel, Executive Director, 421 King Street, Alexandria, Va. 22314.

September 24–26: The Medical Society of the District of Columbia. Mayflower Hotel, Washington. Address: Mr. Thomas Sadler, Executive Director, 2007 Eye Street, N.W., Washington, D. C. 20006.

September 26–October 3: American Academy of General Practice. Philadelphia. Address: Mr. Mac F. Cahal, Executive Director, Volker Blvd. at Brookside, Kansas City, Mo. 64112.

September 30–October 3: American Roentgen Ray Society. Washington Hilton Hotel, Washington. Address: Dr. Ted F. Leigh, Executive Secretary, Emory University Clinic, Atlanta, Ga. 30322.

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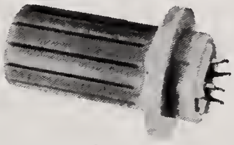

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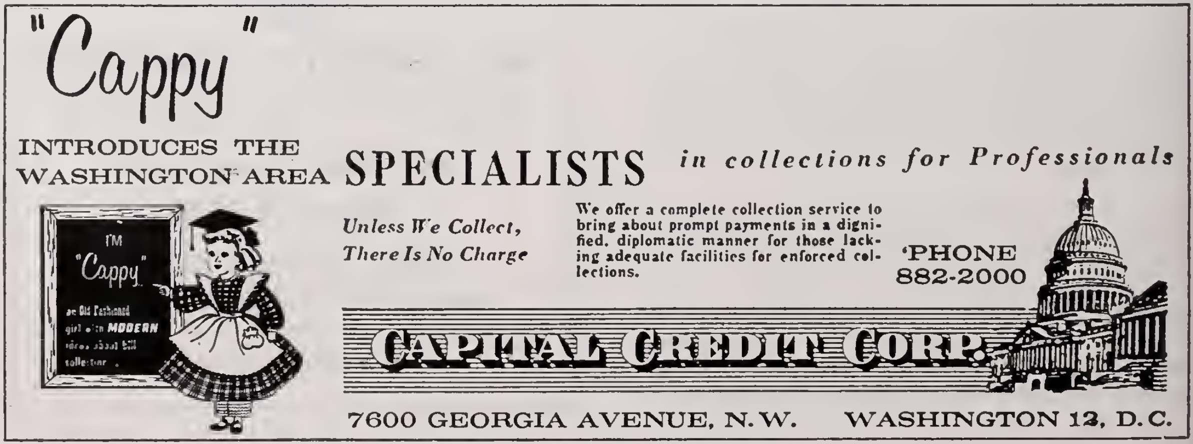
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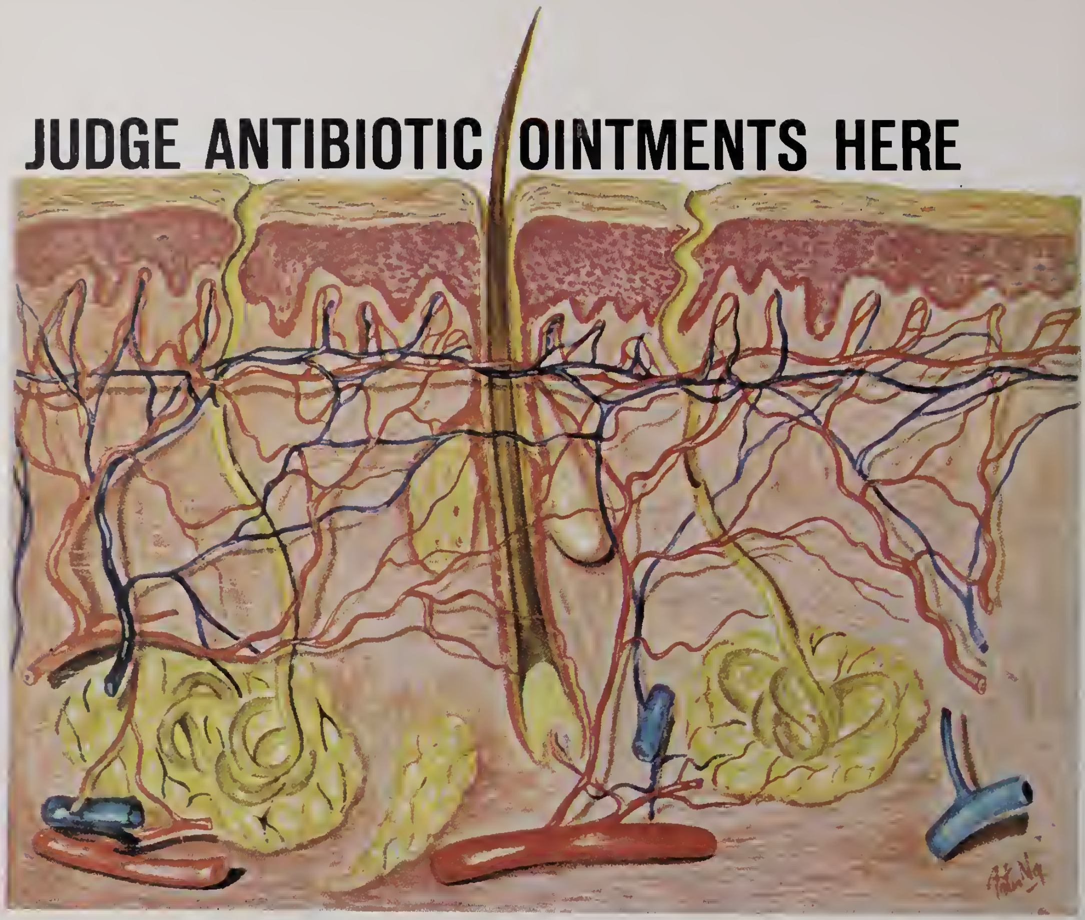

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Neonatal Surgery

R. P. Altman, M.D., and J. G. Randolph, M.D.

Management of Pulmonary Insufficiency

Marvin A. Sackner, M.D.

Generic Equivalency

Major Ronald J. Payne

Problem in Diagnosis of Achalasia of Esophagus

S. K. Saha, M.D., M. Ismail, M.D., and J. B. Johnson, M.D.

Fight or Flight Response

Acors W. Thompson, M.D.

Story of Charles H. Liebermann

Samuel H. Holland

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Annual Scientific Assembly
MAYFLOWER HOTEL
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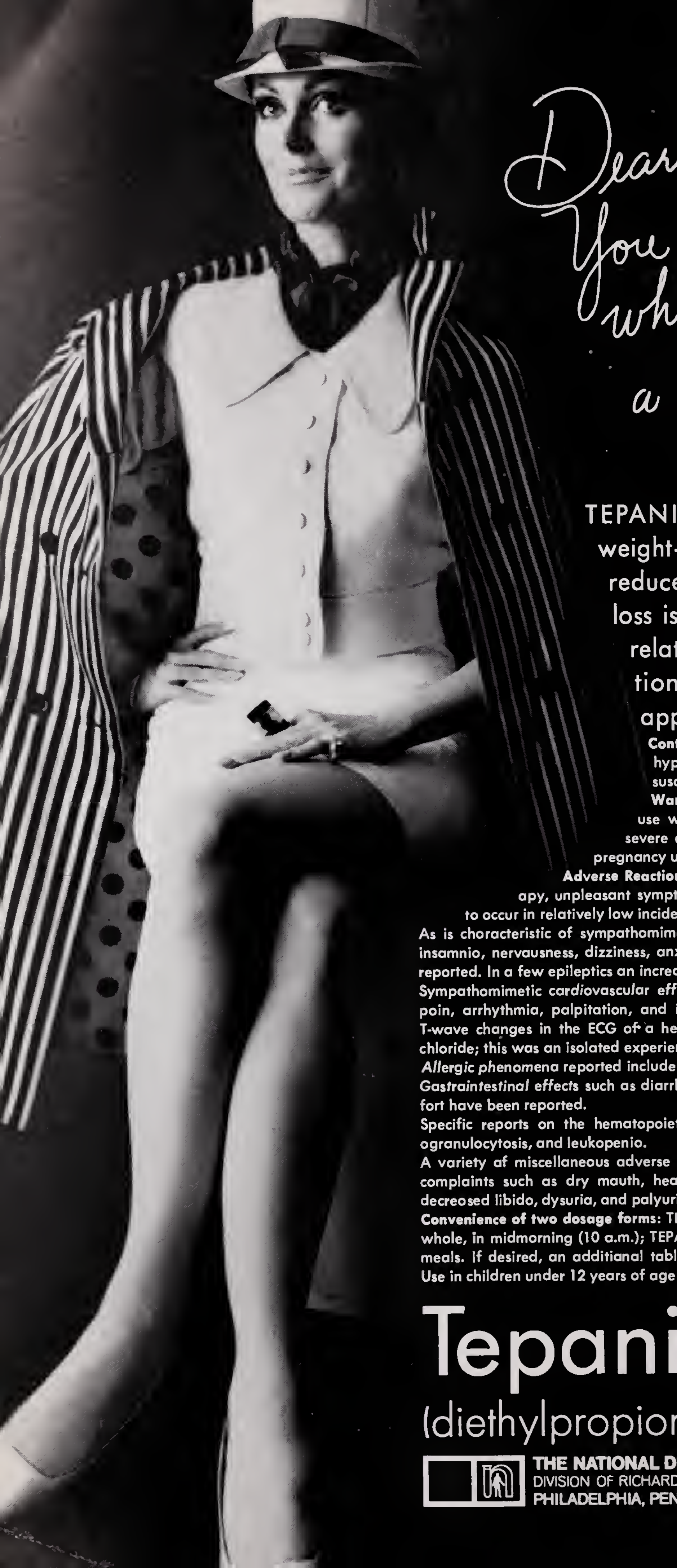

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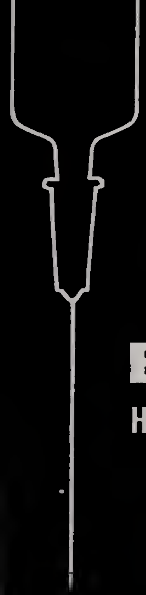

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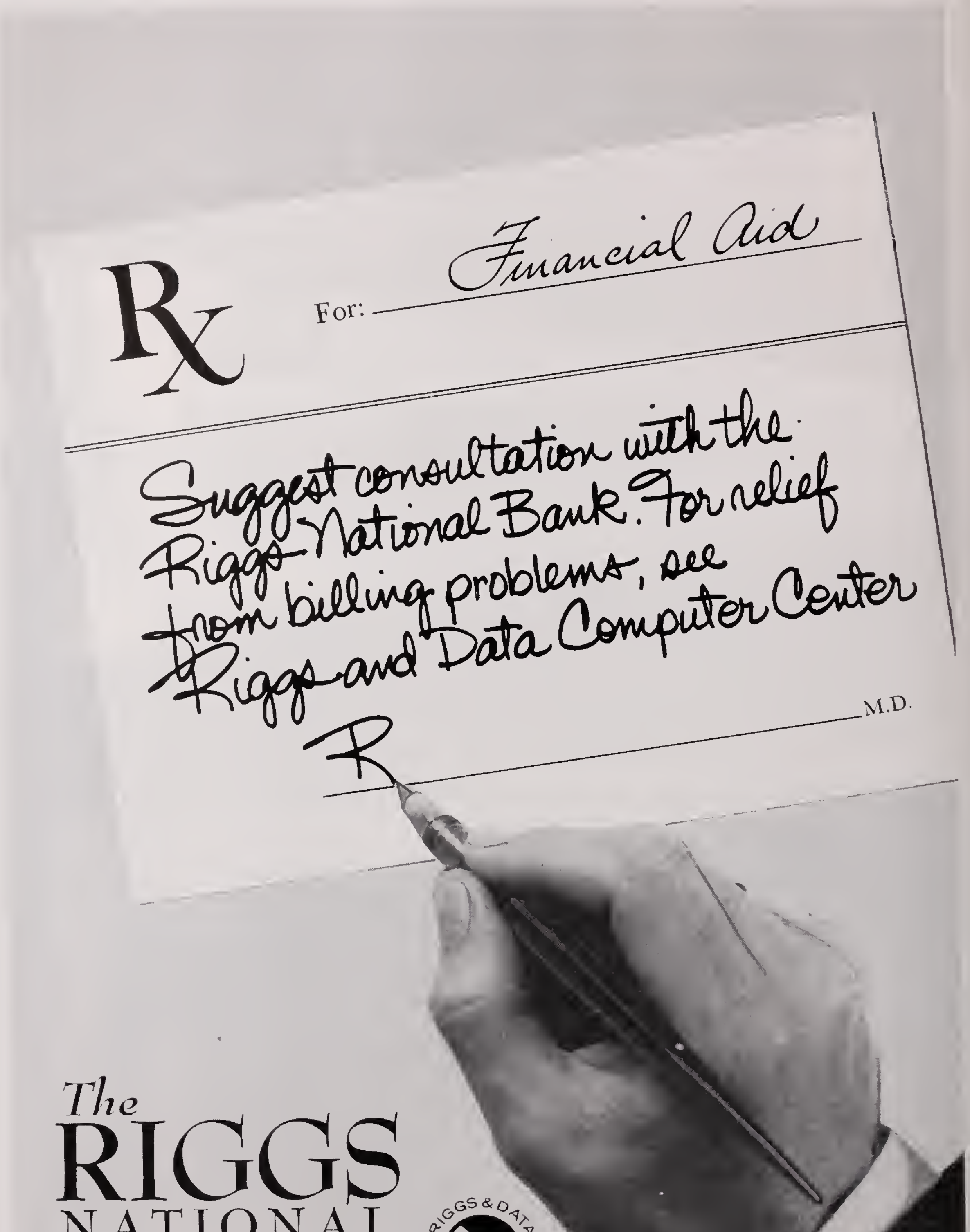

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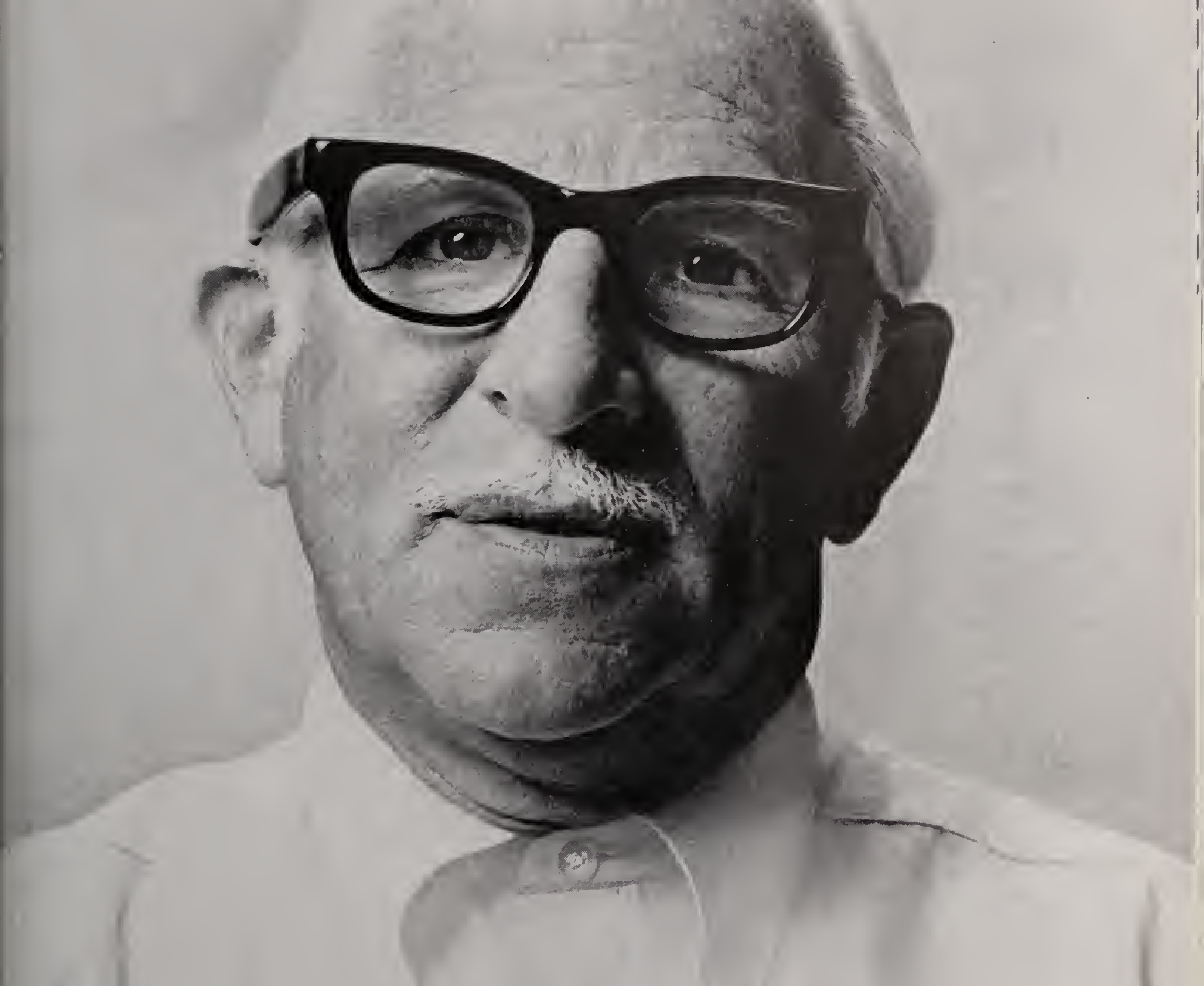

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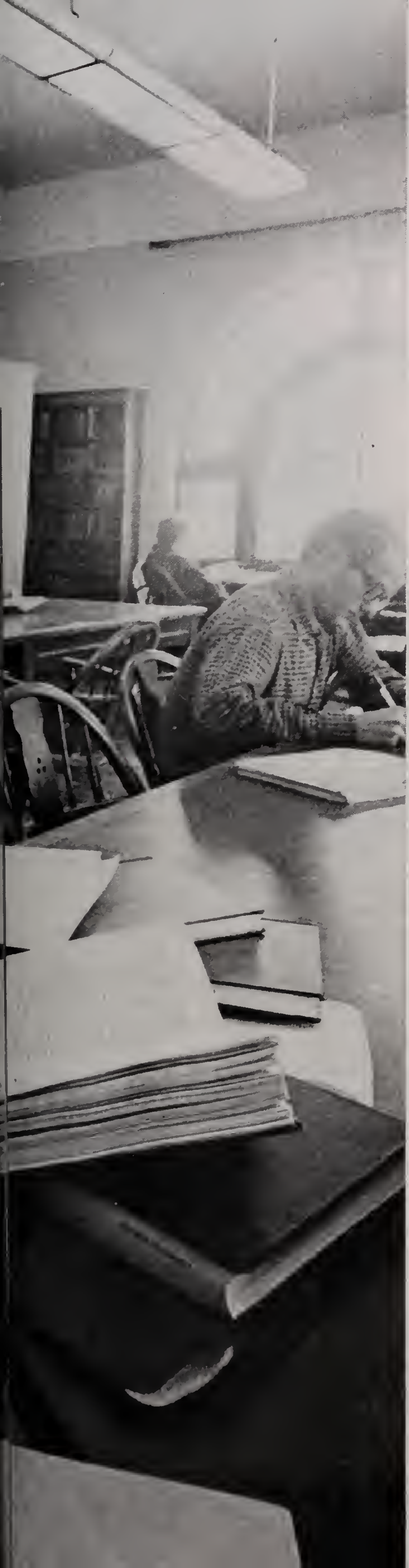

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Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms have occurred following abrupt discontinuance. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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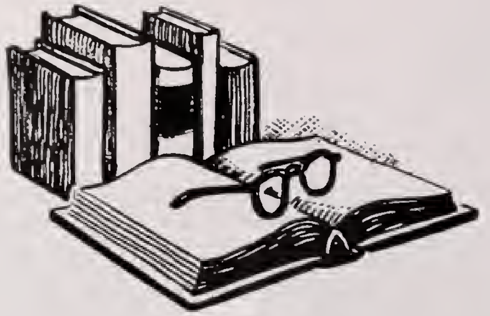

Book Reviews

Diseases of the Nose, Throat and Ear, 11th ed. John Jacob Ballenger, M.D. Price, $32.50. Pp. 948, with 567 illustrations. Philadelphia: Lea & Febiger, 1969.

This, the eleventh edition, represents an extensively revised and updated issue of the recent edition (12 years old). The discipline of otolaryngology, a rapidly expanding surgical subspecialty, is condensed into a single volume. With the exception of the abbreviated coverage of facial fractures (no diagrams or classifications), the major topics are adequately described and the discussion of the diagnostic examinations and treatments are up to date. This text accurately reflects the current principles and techniques as taught and practiced in the otolaryngological residencies in this country.

The chapters dealing with laryngeal trauma and industrial noise exposure are new and call attention to the role the otolaryngologist fulfills in these areas of ever-increasing importance. The expanded sections dealing with reconstruction of the middle ear destroyed by infection and the introduction of the section dealing with the techniques for restoring hearing in the congenitally malformed ear underscore important developments that have occurred in the specialty in the scant 12 years since the appearance of the earlier edition.

The chapters by Dr. Ogura (Laryngology) and Dr. Montgomery (Sinuses) represent concise statements reflecting their respective and respected opinions in these areas.

This text offers a balanced presentation including anatomy, physiology, clinical description, and surgical techniques. For this reason the book is particularly well suited for the residents in training as well as for practitioners of the specialty. Regardless of special interests, however, the reader will find this textbook to be a convenient and comprehensive primary source for the discussion of ENT disorders.

Haskins K. Kashima, M.D.

Diagnosis and Management of Pain Syndromes, 2nd ed. Bernard E. Finneson, M.D., F.A.C.S. Illustrations by Barbara R. Finneson. Price, $12.50. Pp. 337, with 207 illustrations. Philadelphia: Saunders, 1969.

This, the second edition of Dr. Finneson's book, is meant to be a practical guide to the management of the pain problems commonly encountered in practice. It is, according to the author's statement, a compilation of his own personal experience in the management of pain problems. Indeed, one of the major weaknesses of the book is the lack of a bibliography. The reader who desires to inquire more deeply into a particular topic must search out the sources for himself because no references are included.

In attempting to fulfill his aim, the author covers a wide variety of topics. It is somewhat surprising to see lengthy discussions of cervical and lumbar disc disease, cervical spondylosis, and lumbar strain included in a volume dealing with pain syndromes. True, these may be painful conditions, but they are not what is usually meant by "pain syndromes." One has the feeling that they are out of place.

The chapter on headache syndromes, including migraine, histamine, tension, and psychogenic headaches, is excellent. The descriptions are lucid and the discussions thorough. The chapter on autonomic reflex pain, such as causalgia and phantom pain, is also good. Some of the other topics are treated in a rather more superficial fashion than they deserve. This objection applies most strongly to the chapter on pain due to malignant disease, probably the most common of the true "pain problems" seen in practice. The section on the neurophysiology of pain also suffers this same superficial treatment. Standard concepts are set forth but none of the newer work which threatens to revolutionize our thinking in this field.

Throughout the book the author lays great stress on the more conservative modes of treatment. One of the features which I found useful is the detailed instructions given for performing a wide variety of peripheral and autonomic nerve-blocks.

The book is copiously illustrated with line drawings done by the author's wife. These are of high quality and commendable clarity.

In general, then, this book represents a rather shallow appraisal of one man's experience with the pain problems he has seen personally. Its appeal will be quite limited.

William A. Shevlin, M.D.

Post-Traumatic Pulmonary Insufficiency: Pathophysiology of Respiratory Failure and Principles of Respiratory Care after Surgical Operations, Trauma, Hemorrhage, Burns, and Shock. Francis D. Moore, M.D., John H. Lyons, Jr., M.D. Ellison C. Pierce, Jr., M.D., Alfred P. Morgan, Jr., M.D.,

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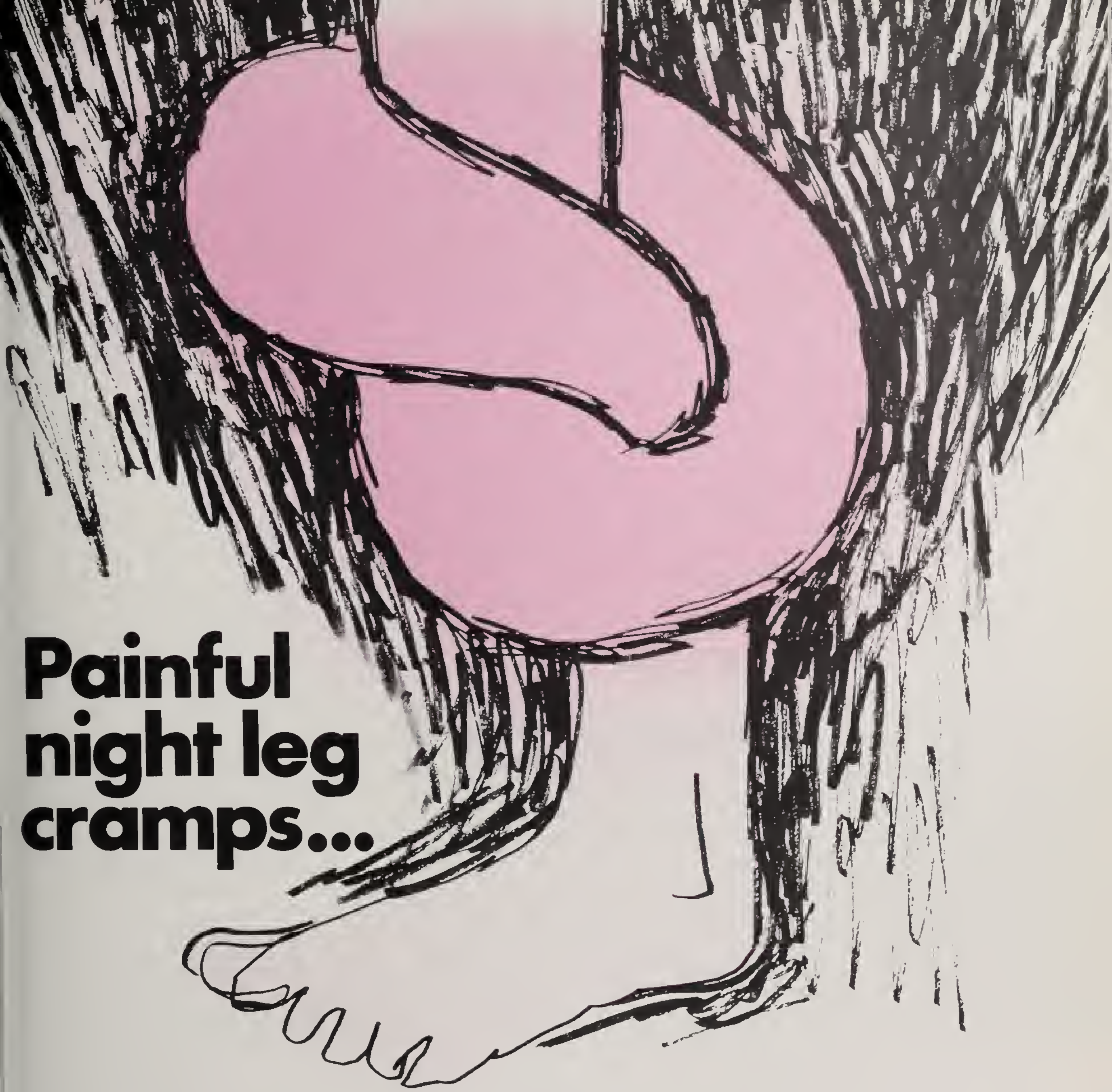

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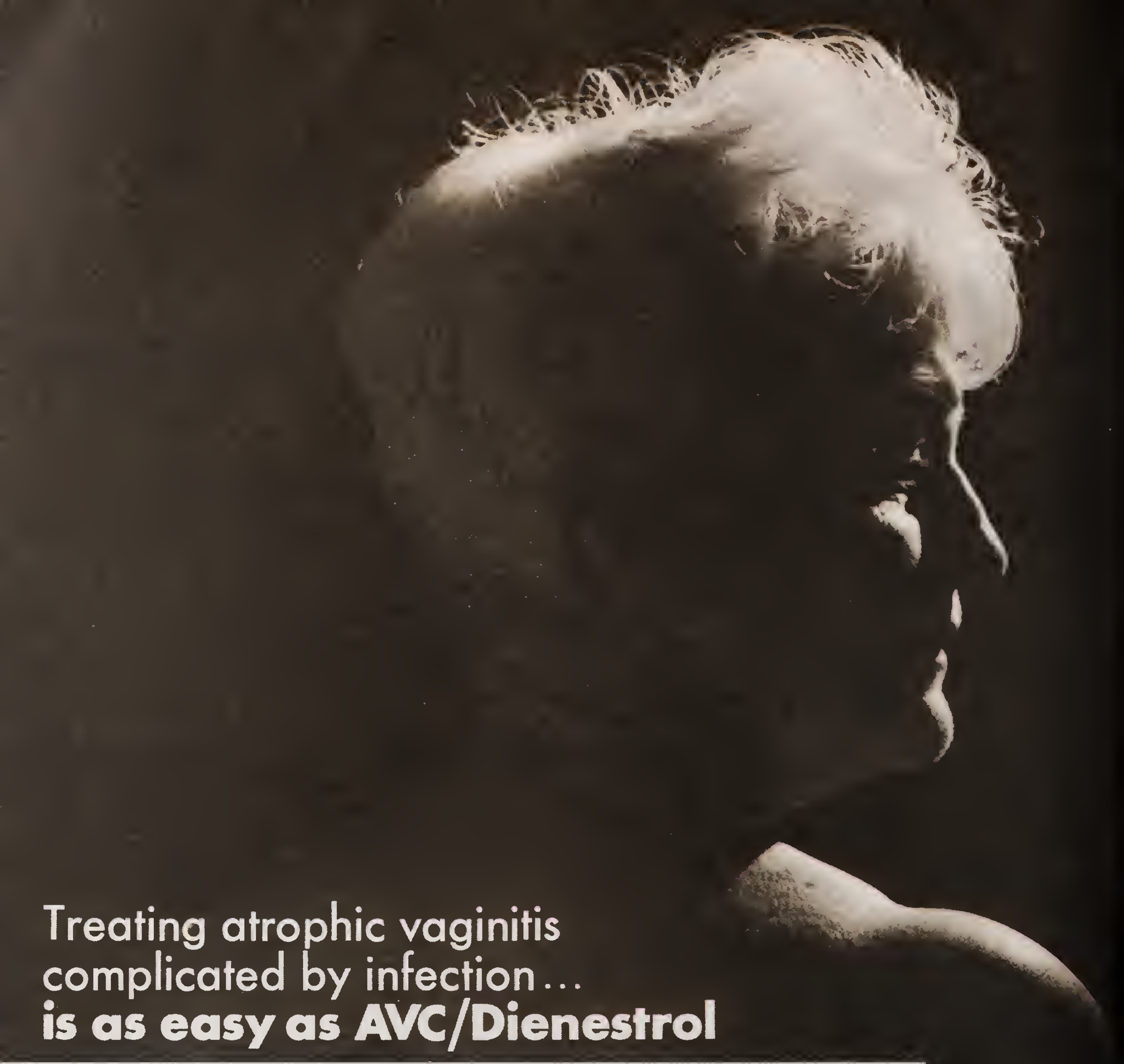

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Book Reviews

(Contined from page 10)

Philip A. Drinker, Ph.D., John D. MacArthur, M.D., and Gustave J. Dammin, M.D. The Departments of Surgery and Pathology of the Harvard Medical School at the Peter Bent Brigham Hospital, Boston, Mass. Price, $12.50. Pp. 234, with 125 illustrations. Philadelphia: Saunders, 1969.

This compact volume, with a mass of detailed facts, deals with the pathophysiology of respiratory failure and how to treat or prevent that failure after surgery, trauma, hemorrhage, burns or shock. The mechanism of death was studied in patients who, prior to one of the insults mentioned above, were in good health and in the prime of life. Ten case studies (5 fatalities and 5 survivals) are the base of examination of clinical and chemical behavior and the disordered physiology.

Early suspicion of pulmonary insufficiency is aroused by a continued requirement for blood after bleeding is controlled, hyperventilation with hypocarbia beyond the period of initial injury, and a disappointing response to 100 per cent oxygen. In spite of treatment there are increasing rales, and spotty, diffuse infiltration is seen on X-ray. It is suggested that vascular shunting, up to 15 to 30 per cent of the cardiac output, may be occurring and that the resultant venous admixture may account for the findings.

Changes in pulmonary surface tension, from 3 dynes/cm. to 18 dynes/cm., interstitial pulmonary edema, hyperplasia and hypertrophy of alveolar cells, and a lung weight of 3 or 4 times normal, all seem to be part of the picture of pulmonary insufficiency.

Many possible causes of these changes, including serotonin, blood transfusions, intravenous materials, fat mobilization, aspiration of gastric contents, microscopic clots, abdominal distention, drying through tracheal tubes, and oxygen toxicity are considered. Finally, a discussion of management and/or prevention of these abnormal states is presented. Details of mechanical ventilation are discussed.

A fine field of contributors have reported their ideas on the phenomenon of pulmonary insufficiency, a disturbing and far from rare complication seen by each physician who does major surgery or treats trauma. This same physician would find this small volume fascinating as well as valuable.

Don S. Wenger, M.D.

Water and Electrolyte Metabolism and Acid-base Balance. Edward Muntwyler, Ph.D. Price (paper), $5.85. Pp. 169, with 33 figures. St. Louis: Mosby, 1968.

The introduction to this brief text by Dr. Muntwyler, Chairman of the Department of Biochemistry, State University of New York in Brooklyn, states that the purpose of the text is to answer certain questions in medicine asked by students in the beginning course of General Biochemistry. The material has served as the basis of lectures in an elective course in applied biochemistry. This reviewer sees no reason why students' questions could not best be handled on an individual basis in the classroom; using this text as an example, I see no reason, necessarily, to publish the basic material one uses in a lecture course. It should be added that this opinion was shared by others who were asked to comment on various sections of this book.

The book is a mixture of fact, some useful illustrations, and a mass of confusing commentary. When clinical situations are used as illustration it is immediately apparent that the information is coming second-hand. As an example of the inaccuracies contained in this book I shall cite 2 examples.

Having presented the Henderson-Hasselbach equation, Dr. Muntwyler states: "When the determination of pH is unavailable, it is sufficiently accurate for clinical purposes to assume that one-twentieth of the determined total CO_2 content represents (H_2CO_3), and the (HCO_3) content can be obtained by subtracting this amount from the concentration of (CO_2)." Obviously, this situation obtains under normal circumstances and not when distortions of bicarbonate concentration or PCO_2 exist.

In writing on the therapy of diabetic acidosis, which is covered in several sections of the text (apparently students frequently ask about the therapy of diabetic acidosis) the author makes the following statement: "According to Elkinton and Danowski, quick-acting insulin in adequate dosage should be given as promptly as possible and in the early phase of the treatment it may be well to give the insulin intravenously." This is followed by the suggestion that patients should receive whole blood, plasma, or plasma substitutes to treat the circulatory insufficiency that accompanies the dehydration and salt depletion of diabetic acidosis. Both statements suggest to me that the author has not recently treated many patients with diabetic acidosis; i.e., one does not, in 1969, have to cite reference for the use of insulin in the therapy of diabetic acidosis; in addition, most patients do not need initial therapy with blood or plasma, but are best started on salt replacement solutions in the strength dictated by the clinical state of the patient.

In summary, this book is confusing, badly written, and in many areas, inaccurate. It has no place outside the lecture room for which it was initially intended.

Jay R. Shapiro, M.D.

Diagnosis of Surgical Disease, Volumes I, II and III. Richard T. Shackelford, M.D., with 22 contributors. Price, 3-volume set, $72.50. Pp. Vol. I, 1–780; Vol. II, 781–1510; Vol. III, 1511–2131. Illustrated and indexed. Philadelphia: Saunders, 1968.

"I am convinced that most failures of surgical treatment are caused by errors of diagnosis; and that most errors in diagnosis are made because the correct diagnosis did not come to mind." With this fundamental

(Continued on page 14)

Book Reviews

(*Continued from page 13*)

premise Dr. Shackelford prefaces a comprehensive coverage of the field of surgery, concentrated on diagnosis but with the added dimension of a succinct summary of current thinking and practice regarding therapy. The elementary subjects of the history and the physical examination are broadened to explore clues to various disorders suggested by various replies. This corresponds to what is known in computer circles as branching logic and adds much to the scope of this section, which incidentally occupies the first 300 pages of Volume I.

I found it both entertaining and instructive. From that portion of the book written by Dr. Shackelford comes the impression of a clinical surgeon of wide experience, keen observation, and an abiding concern for his patients. His style is easy and very readable; he manages to be scholarly without becoming pedantic. His collaborating authors, 22 in number, handle their respective sections with clarity and expertise. The transition between authors is so effortless and unobtrusive that one suspects Dr. Shackelford of editorial genius.

The work is in 3 volumes, which enables comprehensive coverage of fundamentals as well as separate sections on such important topics as Cytopathology, Radioisotope Scanning, Skin Disorders, Specific Fungous Infections, and Surgical Diagnosis in the Newborn.

In spite of very close perusal of this work, I can find no valid criticism of it; rather, I am filled with admiration for Dr. Shackelford and his colleagues in this production. One of the finest features of the work is the emphasis on clinical aspects of surgical diagnosis and treatment while using the laboratory and other scientific disciplines as adjunctive.

The books are pleasingly bound, the printing is readable, and the contents are most rewarding. In spite of the price, these books demand a place on the shelves of both medical students and practitioners of surgery.

KARL C. JONAS, M.D.

Collateral Circulation in Clinical Surgery. Edited by D. E. STRANDNESS, JR., M.D., with 8 contributors. Price, $18.50. Pp. 633, with 242 illustrations. Philadelphia: Saunders, 1969.

This excellent book, for both student and practicing surgeon, is well written with a well-developed pattern which allows for easy and interesting reading.

Each of the various contributors has demonstrated his complete knowledge of the subject not only as to present theory and practice but also its historical development.

The most difficult portion of the book is its first 2 sections which deal with the physiology and pathological anatomy of circulation, and unless the reader is well versed in physics these chapters with their many formulas become somewhat tedious to decipher.

On the other hand, the many illustrations are superb. The fact that they have been placed on the same or facing page in relation to the descriptive text allows greater appreciation and understanding of them.

The only major criticism I have is the method the author has adopted for crediting his references, i.e., by listing the names and dates in the middle of or at the ends of sentences in the text. There is a complete bibliography at the end of each chapter, and if the reference had been numbered and the numbers inserted in the text they would not distract the reader's train of thought, as happens now.

I can recommend this book for anyone interested in vascular diseases, both as a textbook for students and as a reference book for practitioners.

IRA N. BRECHER, M.D.

Symposium on Surgical and Medical Management of Congenital Anomalies of the Eye. Transactions of the New Orleans Academy of Ophthalmology. Contributors: CROWELL BEARD, M.D., HAROLD F. FALLS, M.D., A. FRANCESCHETTI, M.D., JULES FRANCOIS, M.D., GEORGE GOODMAN, M.D., ALEX E. KRILL, M.D., AND HAROLD SCHEIE, M.D. Price, $29.50. Pp. 500, with 283 figures; 8 color plates. St. Louis: Mosby, 1968.

This excellent volume from the New Orleans Academy of Ophthalmology contains selections from 7 internationally prominent ophthalmologists. The material is current and of wide scope, and is presented for the most part in a lucid and easily read style.

The book begins with a review of recent advances in genetics and current genetic terminology, especially as they relate to the eye. This is followed by chapters on chromosomal abnormalities in ophthalmology and recognition of carrier states in genetically determined eye disorders. These 3 chapters, by Dr. Harold Falls, alone justify purchase of the book.

Emphasis throughout the book is on medical rather than surgical problems. In many conditions where recent research has shed light on underlying disease processes (e.g., chromosomal abnormalities) this material is presented in some depth. Of necessity, however, the presentation of many less well understood congenital syndromes is purely descriptive.

The chapters by Dr. Harold Scheie describing his experiences with congenital cataracts and congenital glaucoma are especially well presented and illustrated. Although most readers will be familar with much of this material, they should find review of it in these chapters most profitable and enjoyable.

This book is well indexed and fairly well illustrated. It is largely recommended to the ophthalmologist both for cover-to-cover reading and for future reference. It should also prove of value as a reference book to those in other specialties who occasionally encounter congenital ocular anomalies.

DON R. JOHNSON, M.D.

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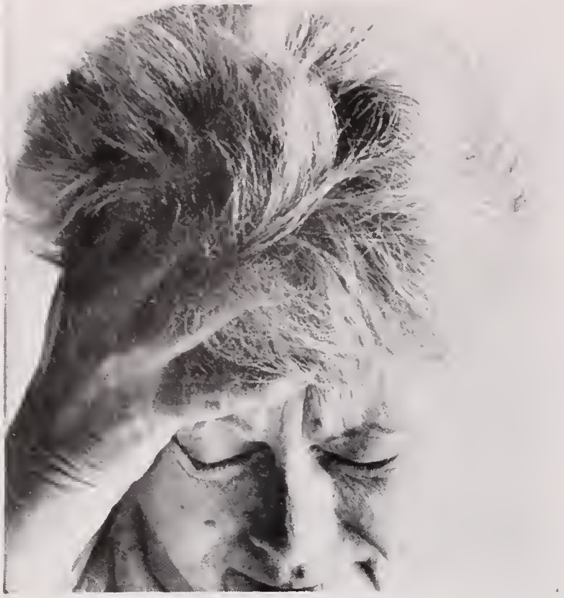

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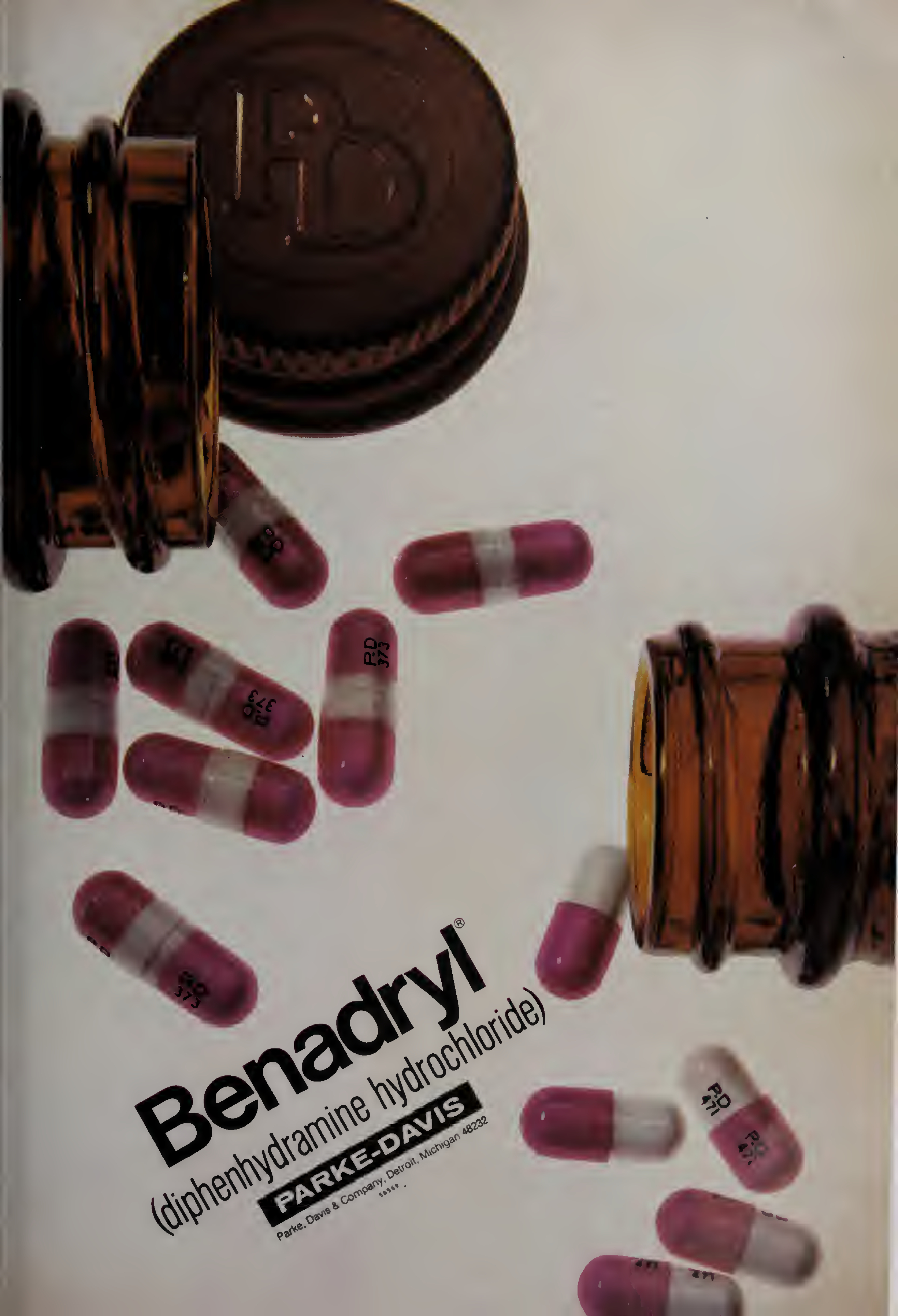
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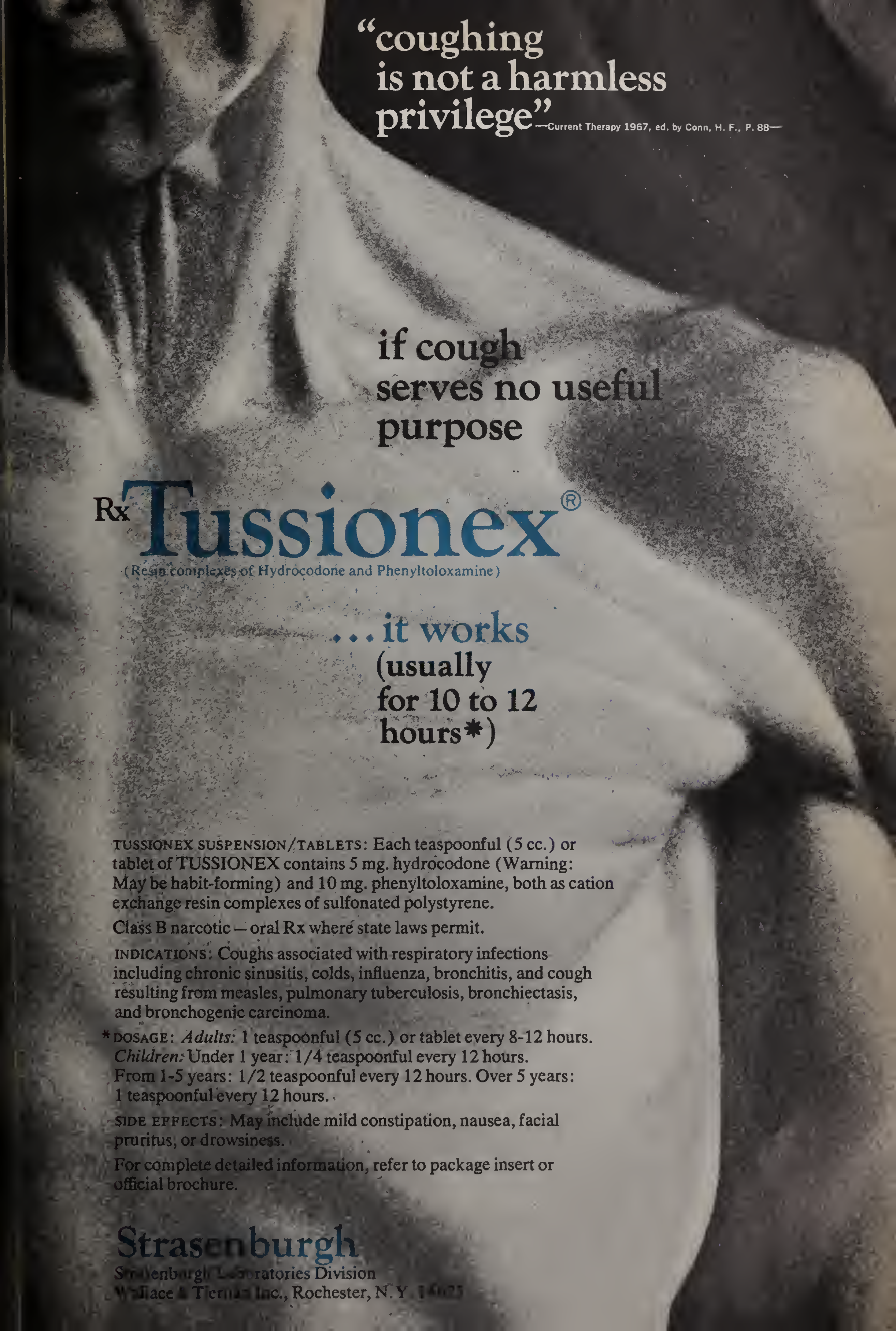

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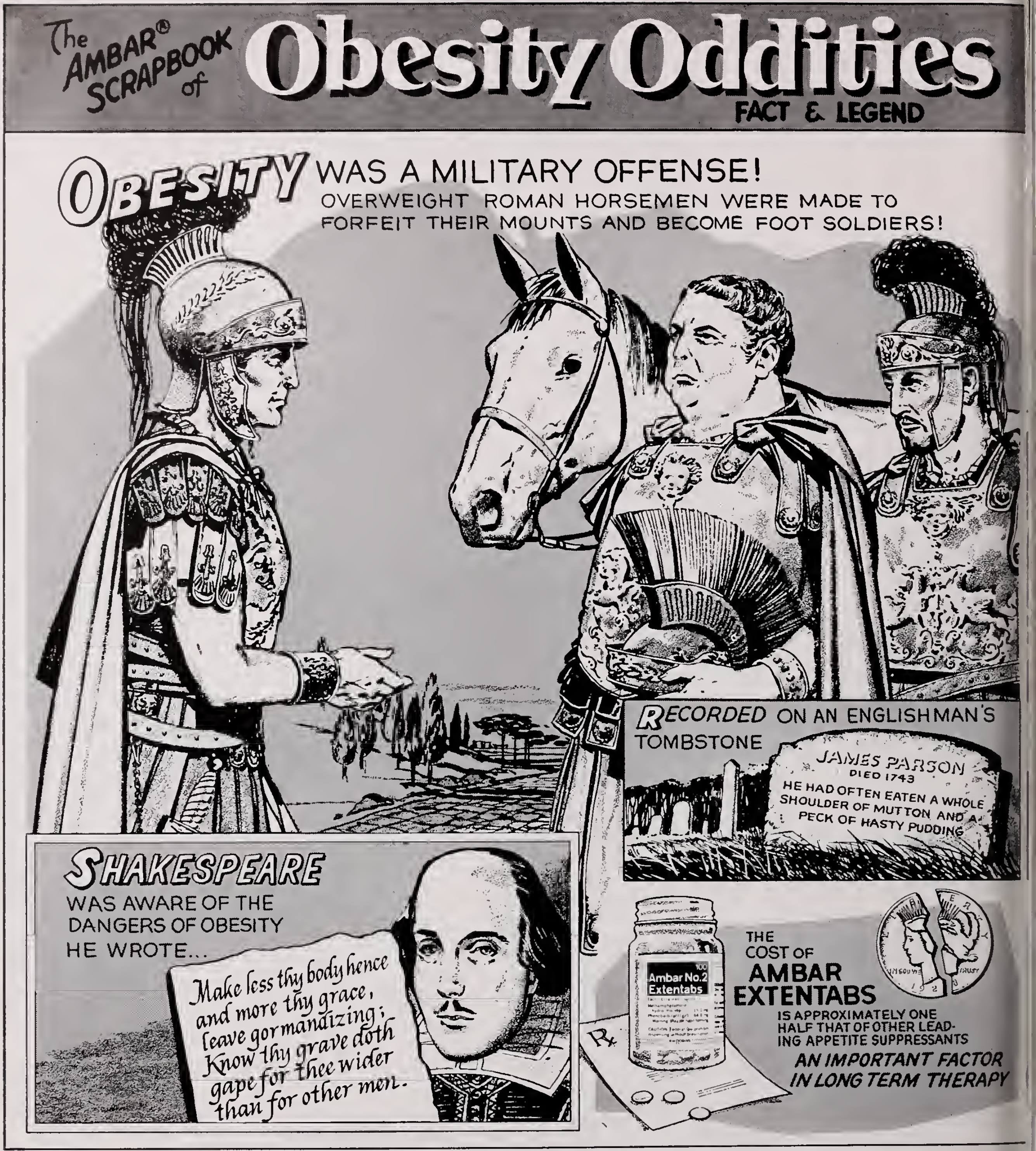
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Neonatal Surgery: Criteria for Success

R. PETER ALTMAN, M.D.,* AND JUDSON G. RANDOLPH, M.D., F.A.C.S.†

THE SURGEON undertaking treatment of the neonate assumes an obligation which is unique in medicine. Palliative measures applicable to patients in older age-groups are usually inadequate. Rather, the effort must provide for normal or near normal function for the life span of the young patient. This is not to imply that the initial goal must be extraordinarily ambitious, but by judicious staging of the procedures available one can direct himself toward this end.

In the newborn age-group, like the patients themselves, the margin for error is small. Judgments need to be prompt and correct if the outcome is to be favorable, or indeed if the infant is to survive. The Children's Hospital of the District of Columbia has endeavored to coördinate its clinical and research efforts toward improved infant care. This report will review the experience in infant surgery at Children's Hospital during the 2-year period from July, 1965 to July, 1967. During this period 543 operative procedures under general anesthesia were performed on infants under 3 months of age. In this study consideration is given to those aspects of preoperative evaluation, surgical technique, and postoperative care which are thought to be essential to the health and survival of the infant. Although the procedures varied in complexity, they are not subdivided into major and minor cases, because we chose to regard any operation which requires general anesthesia as a major event for the neonate. This is justified if one considers the potential danger to the frail structures of the spermatic cord of the infant with an inguinal hernia or the serious metabolic derangements which can accompany a relatively common disorder such as hypertrophic pyloric stenosis.

The United States stands in an unenviable eighteenth place among the nations of the world in terms of infant mortality.[1] The Children's Hospital of the District of Columbia, as well as other medical facilities in the Nation, are directing their efforts toward improvement of this status. Only by achieving close liaison between various pediatric subspecialties necessarily involved in the care of the neonate can this be achieved.

A representative selection of surgical conditions in the newborn will be considered specifically by reviewing the clinical data of patients encountered during the period of the review. Surgical concepts as they have been evolved here and elsewhere will be stressed in instances in which they have contributed significantly to the improvement of patient care. The scope of the problems encountered is shown in table 1.

TABLE 1: Report on Newborn Surgery (Infants under 3 Months) July 1965-July 1967
543 Operative Procedures under General Anesthesia

Lesion	No.	Per cent Surviving
Inguinal hernias	104	100
Pyloric stenosis	87	100
Intestinal abnormalities	48	79
Congenital heart	43	54
Esophageal atresia	14	85
Omphalocele	12	75
Biliary	10	80
Neoplasm	5	80
Diaphragmatic hernia	6	84
Intersex	4	100
Imperforate anus	9	100
Other	211	—

Inguinal Hernia

Inguinal hernias comprised 104 of the 543 procedures during the 2 years. These should be repaired as promptly as possible after the diagnosis is established. The repair of an incarcerated inguinal hernia in the infant can be a formidable undertaking, and the patient is subjected to greater risk than elective herniorrhaphy in an otherwise healthy baby. Ligation of the hernia sac is effective in most instances, and it is rare that anatomic reconstruction of the inguinal canal becomes necessary. Unless there are complicating medical conditions or anesthetic difficulties it is our practice to explore the contralateral side in babies. Many of these operations at Children's Hospital are performed by the resident staff under the supervision of an attending surgeon or a chief resident. Survival has been 100 per cent, and we have experienced no serious complications postoperatively. No recurrences have been seen in this group nor has there been evidence of testicular atrophy in late follow-up evaluation.

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* Attending Surgeon, The Children's Hospital of the District of Columbia, 2125 13th Street, N. W., Washington, D. C. 20009; Instructor in Surgery, George Washington University School of Medicine.

† Surgeon-in-Chief, The Children's Hospital of the District of Columbia; Professor of Surgery, George Washington University School of Medicine.

Congenital Hypertrophic Pyloric Stenosis

The most common indication for laparotomy in babies under 3 months of age is congenital hypertrophic pyloric stenosis; in our group there were 87 patients. A high index of suspicion in the medical community at large has led to relatively early diagnosis in the majority of these babies. Palpation of the pyloric "tumor" accompanied by a compatible history of bile-free vomitus is indication for exploration. In only about 10 per cent of the cases are diagnostic X-ray contrast studies needed.

In many instances surgery can be undertaken with minimal preoperative preparation, omitting usual measures such as intravenous therapy or electrolyte determination. Such decisions rest on a careful history of the length of symptoms and the general appearance and state of hydration of the baby. The operation, in the hands of experienced surgeons or properly supervised senior residents, requires 15 to 25 minutes. Access to the pylorus is readily gained through a transverse incision over the right rectus muscle, following which the muscle is split in the direction of its fibers. The peritoneum is opened vertically and the pylorus delivered.[2] A standard Ramstedt pyloromyotomy is then accomplished. In babies who have not required extensive preoperative preparation glucose water feedings can safely be commenced 4 hours after surgery with a steady progression to standard formula by the second postoperative day. Most babies are home by the third or fourth day.

The occasional patient having the characteristic metabolic derangements associated with pyloric obstruction may require extremely aggressive preoperative management to be rendered a satisfactory candidate for operation (figure 1). The consequences of delayed diagnosis in pyloric stenosis are readily seen. Dehydration is manifested by weight loss, azotemia, and hemoconcentration. Seen too is the alkalosis resulting from depletion of chloride secondary to protracted vomiting as well as the marked deficiences of sodium and potassium. In such grave circumstances precise monitoring of the electrolytes by microtechniques is utilized as the potassium and chloride stores are replenished and supplementary colloid is provided in the form of albumin or blood. Depending upon the magnitude of the deficits and the clinical condition of the infant, replacement therapy may require from 24 to 48 hours or even longer in severely neglected patients. Convalescence may be prolonged in this latter group, but we have had no mortalities or major wound complications.

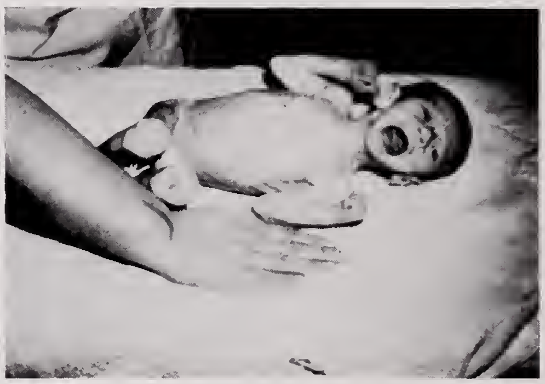


FIG. 1. Pyloric stenosis: an example of severe depletion now rarely seen.

BIRTH WEIGHT: 7 lbs. 8 oz.
WEIGHT AT 6 WEEKS: 6 lbs. 4 oz.

DEHYDRATION

BUN: 38 mg. %
Urine vol.: decreased
Urine sp. gr.: 1.036

HEMOCONCENTRATION

Volume: 210 c.c.
HCT: 36

ALKALOSIS

Chloride: 68
CO_2: 42
pH: 7.5
Na: 118
K: 2.6

STARVATION

↓ Protein stores
↓ Fat
↓ Carbohydrate

Esophageal Atresia

Perhaps the most challenging problem facing surgeons and anesthesiologists in the pediatric surgical sphere is the esophageal atresia with tracheo-esophageal fistula. Prompt pursuit of the correct course is mandatory if these infants are to be salvaged. We have dealt with 14 infants with esophageal atresia. Although some of these infants were premature or desperately ill with pneumonitis, 12 have been brought through successfully for an 85 per cent survival rate.

An alert obstetrical unit aware of the clinical signs and symptoms associated with this anomaly is of utmost importance. The surgical team receiving the baby prior to the development of serious pulmonary complications is clearly "ahead of the game." However, this ideal is not always achieved.

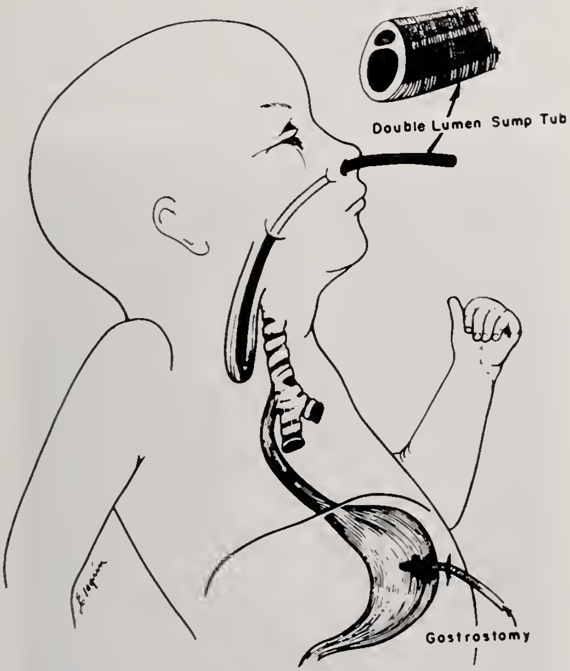


FIG. 2. Esophageal atresia: staging of operative procedures by gastrostomy and suction to upper pouch.

The management must therefore be individualized and the surgical approach varied according to the condition of the baby and the presence of other anomalies. The diagnosis can be established with the failure of a nasogastric tube to advance into the stomach. The installation of 1 ml. of dilute contrast material provides the confirmatory evidence as the upper esophageal pouch is visualized by X-rays. Once the diagnosis has been confirmed the eventual outcome may be determined by the surgical alternative selected. In a robust, full-term infant without complicating pneumonia a thoracotomy with prompt closure of the tracheal fistula and direct anastomosis of the esophageal ends should be performed. Techniques of esophageal repair are under investigation at the Children's Hospital. The traditional anastomosis described by Haight[3] has been modified. We have accomplished repair with a single-layer, everting technique.[4] The latter has the advantage of speed, and in the growing puppy has yielded less stricture than conventional anastomotic techniques. Results of clinical use are currently being studied.

In the premature infant or the baby who has developed pneumonitis immediate thoracotomy is likely to meet with disaster. We are in agreement with the concept put forth by Holder and his coworkers[5] and have, in such instances, resorted to a staged correction of the anomaly. A gastrostomy performed through a small abdominal incision under local anesthesia is a simple but vital temporizing measure (figure 2). Egress is thus provided for gastric content which would otherwise spill over through the fistula into the lungs. At the same time, with the baby in strict upright position, a sump suction tube[6] is positioned in the upper esophageal pouch and connected to suction. Intensive conservative care and constant observation are then instituted. Over the next several days it is decided whether improvement will allow thoracotomy and operative correction or whether a temporizing procedure is a wiser course.

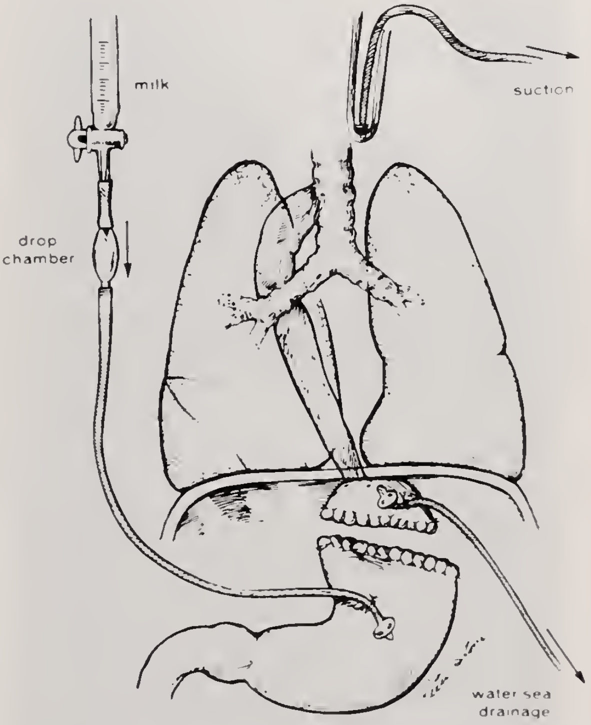


FIG. 3. Esophageal atresia: tracheoesophageal fistula management by temporary division of stomach.

When it is thought that primary correction would be hazardous but a short period of general anesthesia acceptable, we have proceeded to carry out a gastric division with placement of a tube in both the upper and lower gastric pouches (figure 3). In this way an efficient route for nutrition is achieved, and the danger of reflux aspiration is eliminated.[7] A suction tube in the pharyngeal esophagus supplements the operative procedure. Infants can then be maintained in this state for many weeks and will gain and thrive. After a month or more the thoracotomy and esophageal reconstruction can be undertaken with confidence. The stomach is reanastomosed at still a later time, thereby establishing normal gastrointestinal continuity.

It can be appreciated that to undertake the treatment of a newborn with this anomaly takes one many hours of painstaking care. The hours consumed in the nursing and day-to-day care of these infants cannot be tabulated. Of the 14 patients treated during the period of this study, 5 required staged reconstruction of the types described above. We are convinced that the favorable outcome in these cases resulted from the selection and proper utilization of this arduous conservative approach.

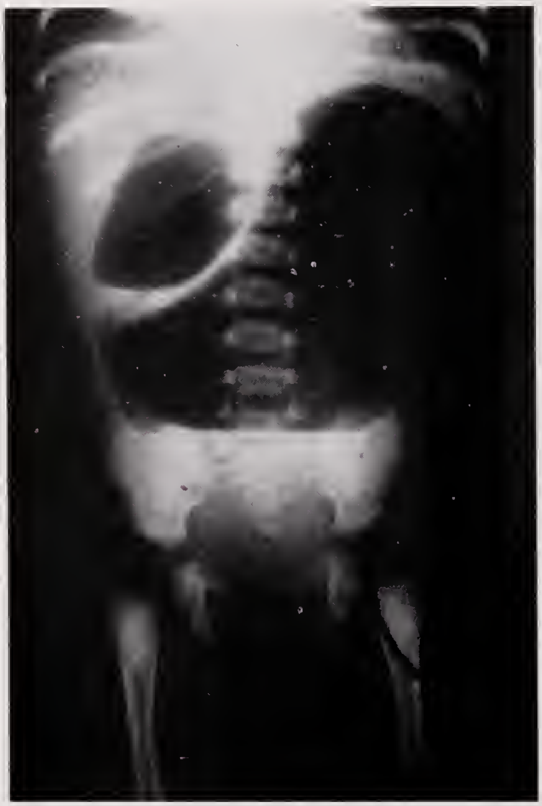


FIG. 4. Intestinal obstruction: "double bubble" indicative of duodenal obstruction.

Intestinal Anomalies

In the span of this review there were 48 intestinal anomalies. Included among these are bowel atresias (15), annular pancreas (3), obstructions secondary to meconium ileus (6), intestinal duplication (2), Hirschsprung's disease (6), and malrotations with and without volvulus (9). The presence of abdominal distention in the newborn, especially when associated with bile-stained vomitus, is an ominous sign and places the burden on the physician to exclude all mechanical causes before accepting a nonsurgical etiology to account for these findings.

A flat and upright abdominal film and the installation of a few ounces of air via nasogastric tube often provide a satisfactory contrast study to achieve a precise diagnosis (figures 4 and 5).

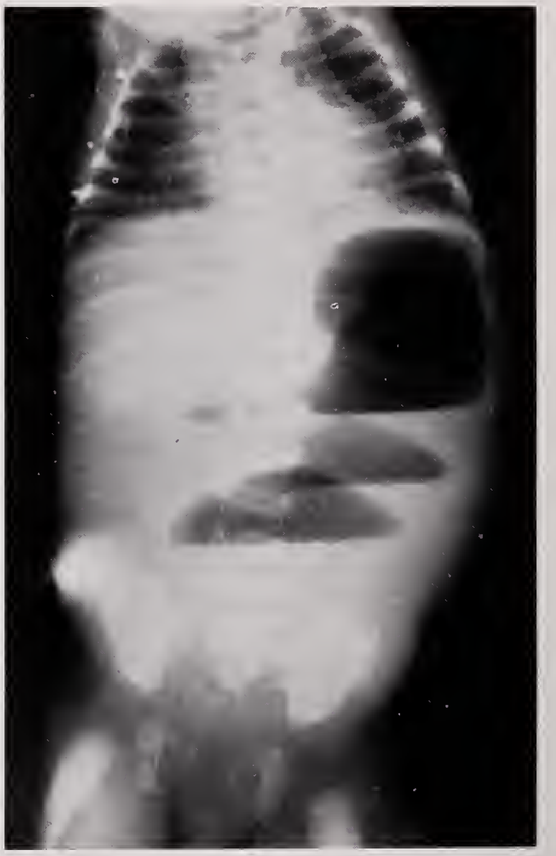


FIG. 5. Intestinal obstruction: air-fluid levels associated with distal bowel obstruction.

Barium, or other contrast material other than air in the stomach, is generally unnecessary and can be hazardous. A barium enema performed by a radiologist familiar with babies and with pathology of the newborn may provide valuable information regarding the status of the distal gastrointestinal tract. Thus, the finding of a "microcolon" might lend support to a diagnosis of intestinal atresia, while dilatation would alert one to the possibility of Hirschsprung's disease; similarly, colonic or rectal atresia can be precisely located. In addition, it is imperative that malrotation with its attendant threat of volvulus be ruled out by a barium enema study. Once the diagnosis of intestinal obstruction is established one does not have the luxury of many hours to bring the patient into condition for surgery. When too much time is expended in this direction, preoperative "preparation" becomes preoperative delay, thus obviating the chances for surgical success. Instead, fluid and electrolyte correction should be accomplished promptly. Blood or colloid should be administered with dispatch and the patient taken to the operating room. Certainly these activities should consume no more than 3 or 4 hours for even the most critically depleted newborn. The time sequence and term "overnight" are eliminated in newborn surgery.

The surgical procedures will, of course, vary with the lesion encountered, and it is not within the scope of this paper to deal at length with each one. However, one point to be made is the advisability of limiting the duration of the operative procedure in these precarious subjects. Although a neat primary bowel union can often be constructed, it is sometimes wise to use a temporizing procedure. Such abdominal catastrophies as gangrenous bowel, perforations with longstanding peritonitis or meconium (antenatal) peritonitis are best handled by the shortest possible operation. In such circumstances we have resorted to the Mikulicz procedure.[8] The double-barreled enterostomy provides for rapid, effective decompression of the bowel (figure 6). To be sure, it requires exquisite aftercare, but the survival statistics in this study and in other institutions employing the Mikulicz principle are convincing. Taken with the staged procedures for esophageal atresia, this type of management underscores the value of staged maneuvers to rescue the baby who then "lives to fight another day."

The Mikulicz resection is also useful in the surgical treatment of meconium ileus, a condition almost always associated with cystic fibrosis of the pancreas. Irrigations of the bowel with N-acetyl-l-cysteine (Mucomyst®), both in the intraoperative and postoperative periods have aided in the evacuation of the adhesive meconium. As these patients recover studies are made to establish or exclude the diagnosis of cystic fibrosis. We are fortunate in having available a consulting service devoted exclusively to the care of patients with this condition, a circumstance which contributes in a large measure to our success with this group.

Diaphragmatic Hernia

Congenital hernias of the diaphragm (Bochdalek) warrant special comment. These represent another instance in which no elaborate diagnostic measures need be employed prior to surgical intervention. A chest X-ray film establishes the diagnosis in a baby with respiratory distress (figure 7). A Levine tube should be passed at once and placed on suction before gaseous distention of the bowel can further displace the mediastinum and add to the pulmonary compromise. No time should be lost in getting the baby to the operating room. Anesthesiologists are divided on the need for endotracheal intubation. For a typical posterior hernia, a left subcostal incision is made, and the viscera are removed from the thoracic cavity. All of this should require very few minutes to accomplish. With the major threat to the infant's survival corrected, repair of the diaphragmatic

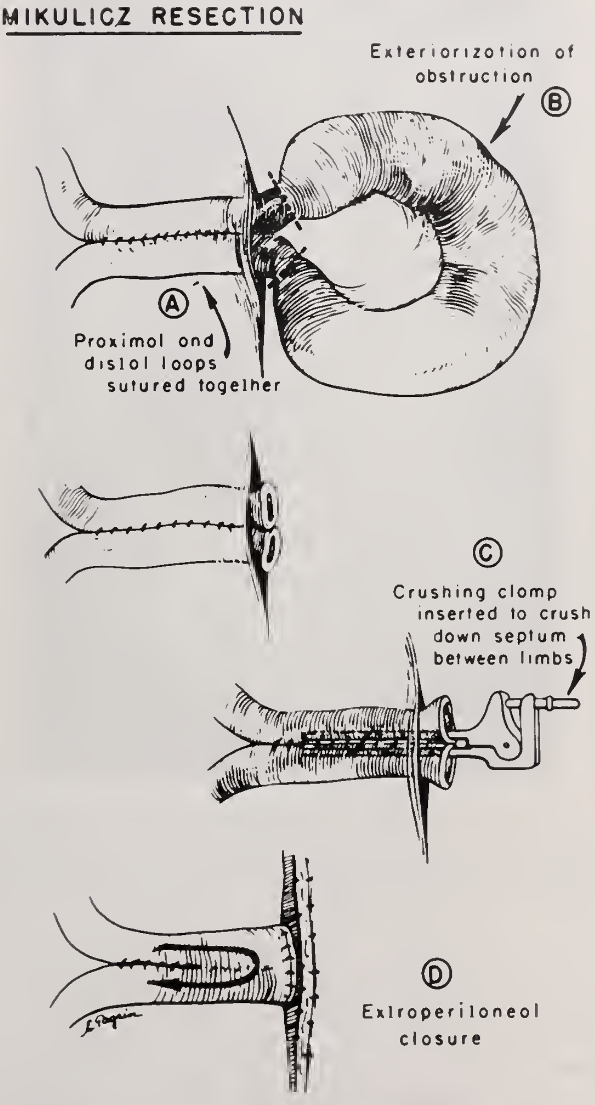

MIKULICZ RESECTION
Exteriorization of obstruction
B
A
Proximal and distal loops sutured together
C
Crushing clamp inserted to crush down septum between limbs
D
Extraperitoneal closure

FIG. 6. Principles of Mikulicz's double-barreled enterostomy.

defect can then be achieved. The abdominal cavity may be unable to accept the viscera reduced from the chest without undue tension and attendant pressure on the diaphragm and the inferior vena cava. In such cases only the skin need be approximated and no attempt made to repair the fascia. The ventral hernia is readily accepted in the interest of better pulmonary function.[9]

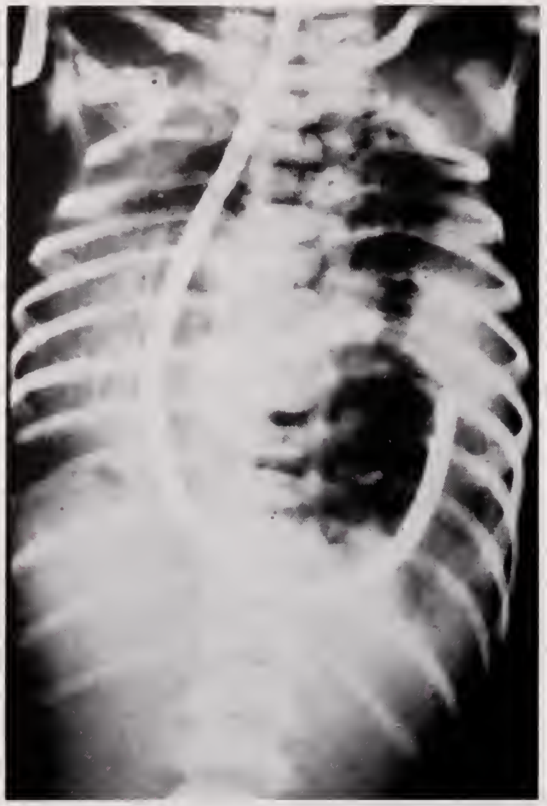


FIG. 7. X-ray study depicting infant with left (Bochdalek type) diaphragmatic hernia showing viscera in left hemithorax. Heart is displaced to right chest wall; the catheter is lying in stomach.

The hypoplastic lung will not readily expand to fill the left hemithorax, nor should vigorous attempts be made to make it do so. Unless the lungs are managed adroitly by the anesthesiologist, potential hazards such as pneumothorax become realities. Recognition of the metabolic alterations occurring in both the preoperative and postoperative period have led to increased salvage of these babies. The acidosis is treated by intravenous administration of base according to the variations in the blood gases and pH. However, the ultimate correction of the metabolic defect depends on gradual respiratory compensation and more efficient excretion of carbon dioxide by this route.

One must accomplish not only a technically adequate surgical repair of the congenital defect in the diaphragm but carry the baby through the critical postoperative period when the risk to life-survival is equally great. The ventral hernia created is closed at 10 to 14 days of life, at which time the critical pulmonary situation has been relieved. By managing our 6 cases according to these precepts, we have achieved an 84 per cent survival.

Omphalocele

Congenital defects about the umbilicus are not uncommonly encountered in an active pediatric center. During the 2-year period of this clinical study 13 patients with omphalocele were treated. Nine patients survived (75 per cent). The nature of, and size of the omphalocele, presence of a sac and coëxistent anomalies, and the general condition of the baby determine the mode of therapy selected (figure 8). If one is faced with a ruptured omphalocele, quite clearly surgical repair is required to restore the viscera to an intra-abdominal position. On the other hand, the huge defect covered with an intact sac may be amenable to treatment with an escarifying agent such as Mercurochrome.® Smaller defects lend themselves to primary 2-layer repair.

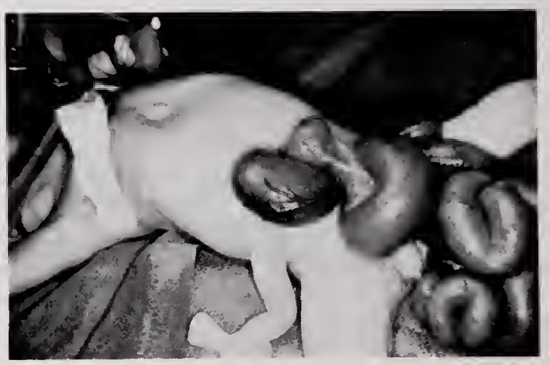
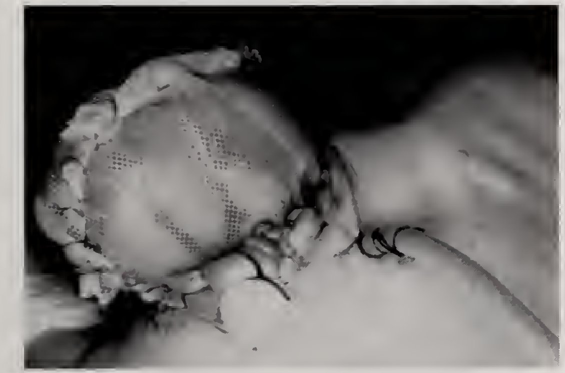


FIG. 8. Ruptured omphalocele.

There are instances when one is forced to attempt surgical correction when the undeveloped abdominal cavity will not accept the prolapsed viscera without undue pressure on the diaphragms and consequent respiratory embarrassment. In such instances the use of plastic prosthetic materials for reconstruction of the anterior abdominal wall may be life-saving. Silastic-covered Marlex Meshcite® (Ethicon) enables one to cover the abdominal organs while reducing the likelihood for dense adhesions to form between the bowel and skin if the latter alone is utilized for closure (figure 9). A gastrostomy is employed routinely. One will find that the abdominal cavity gradually expands and that over the ensuing days slack will develop in the prosthetic covering. This can be gathered up by means of a running suture to restore the proper intra-abdominal tension necessary to promote further expansion of the abdominal cavity. It may be necessary to carry out this maneuver several times, but eventually a skin-to-skin approximation can be achieved beneath which a pseudoperitoneum has developed. Return of bowel activity is slow, and prolonged intravenous feedings are the rule. Blood and albumin supplements are required at regular intervals. We have found that 0.5 per cent silver nitrate solution incorporated in the dressings provides effective prophylaxis against infection.



[FIG. 9. Temporary Marlex mesh-silastic covering for large, ruptured omphalocele. Gastrostomy tube is seen.

Imperforate Anus

In the majority of patients with imperforate anus satisfactory repair can be accomplished by a perineal approach to the anoplasty. This applies in instances in which the rectum has traversed the levator muscles. If a fistula to the perineum exists, immediate decompression can be accomplished by dilation of the fistula preparatory to the formal anoplasty.

One must be mindful that a fistulous connection between the rectum and urinary tract may exist, and all attempts must be made to demonstrate this, especially if urinary tract infection or watery diarrhea are associated with the imperforate anus. For those situations in which a fistula is present or the rectal pouch has not traversed the rectourethralis muscle a more elaborate surgical approach is necessary. This is usually preceded by an emergency decompressive transverse colostomy. In these cases surgical restoration must be precise if one is to achieve the goal of anal continence. Here an abdominoperineal or sacroperineal approach is utilized.[10] The fistula is divided and the rectum is brought down to the previously marked anal dimple. It is crucial that the puborectalis muscle be identified and the rectum transplanted to the perineum anterior to this muscle (figure 10). If this is accomplished one can anticipate rectal continence. Close supervision in the postoperative period is mandatory, and judicious dilations are done at appropriate intervals. In this

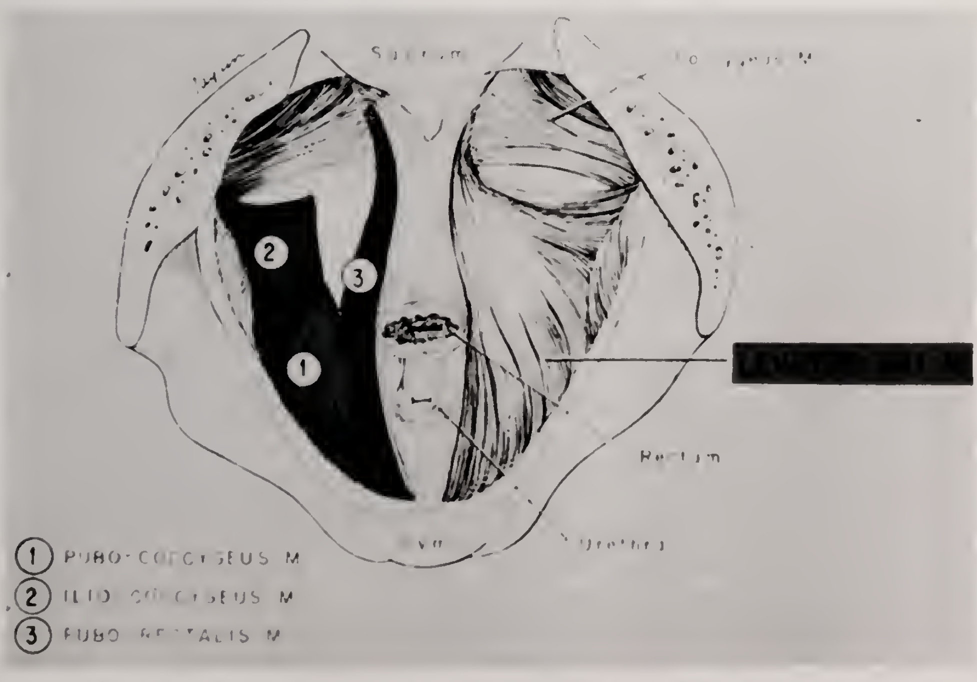


FIG. 10. Anatomic representation of components of levator sling through which rectum must pass.

surgery the goal is an elastic, supple, properly innervated anus.

Neoplasms

The approach to malignant neoplasms in the newborn should be, when feasible, clean total excision. Although malignant tumors are not seen frequently in infants under 3 months of age, 5 such cases were encountered at Children's Hospital during the period encompassed by this study. Among these were 1 Wilms' tumor, 1 hepatoma, 1 pelvic rhabdomyosarcoma, and 2 sacrococcygeal teratomas.

Following hepatic lobectomy on the first day of life the baby with hepatoma died. The remaining 4 patients are alive and free from demonstrable disease. Supplementary chemotherapy has been used in conjunction with surgery where it is known to be effective. X-ray treatment is generally to be avoided at this age because of the known growth disturbances. A relatively optimistic philosophy has been adopted with regard to these patients since we have recognized that surgical cures are attainable in this age-group.

Biliary Obstruction

Neonatal jaundice is a very common entity. Although the vast majority of these cases will be of hematologic, metabolic, or infectious etiology, a significant number require surgical exploration to establish a diagnosis or effect a cure. If, after 1 month the basis for the bilirubinemia has not been explained, laparotomy should be undertaken. Beyond this period irreversible biliary cirrhosis may ensue, defeating any chances for surgical correction. It is important to remember that liver chemistries are not clearly separable into hepatocellular or obstructive values in babies. At the time of exploration a cholangiogram is carried out through the gallbladder or its remnant (figure 11). If this is normal a liver biopsy is obtained and the abdomen closed. This is a short, relatively easy procedure and one in which we believe the risk to the baby with hepatitis is outweighed by the potential gain to those with correctible obstructive lesions. There were 4 such cases in this former group, and none had difficulty with the anesthesia.

If an anatomic situation exists making surgical reconstruction of the extrahepatic biliary system possible, this is undertaken. Conversely, should the cholangiogram suggest a hopeless situation, an extended exploration of the porta hepatis is carried out in an attempt to identify any extrahepatic ducts with which continuity to the gastrointestinal tract can be established. The majority of this latter group must await the day of liver transplantation for their salvation. Three of the 4 babies with biliary atresia have died. The remaining 4 patients explored for obstructive jaundice are alive and well. Two had choledochal cysts which were successfully by-passed. One had a common-duct stone, and the remaining baby had sclerosing cholangitis which responded to treatment with corticosteroids.

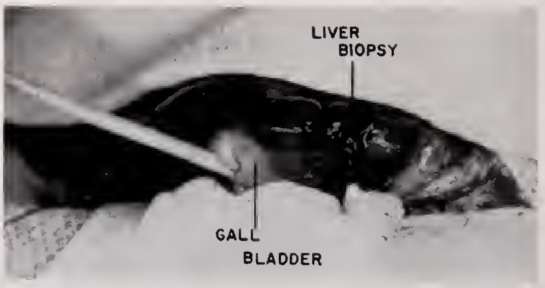


FIG. 11. Neonatal jaundice: operative cholangiogram and liver biopsy.

Intersex Anomalies

Among the most perplexing problems encountered by pediatricians and surgeons alike are those babies with ambiguous external genitalia. Recognition of this problem and proper sex assignment in the early days of life can prevent tragic later developments. Although there are numerous complex endocrinologic and anatomic ramifications of the problem, the practitioner is frequently faced with determining whether he is dealing with a male having hypospadias and undescended testicles or a female with hypertrophy of the clitoris and labial fusion (figure 12). In order to make the proper sex assignment it is necessary to record a careful history, including family history and information regarding hormones taken by the mother during pregnancy. Rectal examination may shed light on the problem if, for example, the uterus can be palpated. In addition, more elaborate studies of the chromosomal morphology and determination of steroid metabolites in the urine must be evaluated. X-ray contrast studies of the urethra and urogenital sinus may be helpful.

At the conclusion of these diagnostic steps one is sometimes obliged to proceed with surgical exploration of the pelvis for evaluation of internal genital structure and biopsy of the existing gonads. Plastic procedures on the clitoris are available and can be accomplished when the correctly designated female has achieved satisfactory size.[11]

Clearly, the sooner the correct sex assignment can be made, the better it will be for the developing infant and for the perplexed family.

Congenital Heart Disease

Newborn babies with symptomatic congenital heart disease necessarily gravitate toward centers where sophisticated diagnostic techniques and facilities for open-heart surgery are available. Children's Hospital treated surgically 43 such babies with a 54 per cent survival. This figure includes those infants having severe deformities not ordinarily considered compatible with life. With a more favorable lesion, e.g., patent ductus arteriosus, survival was 100 per cent. Tetralogy of Fallot managed with early Blalock or Pott's shunts resulted in 6 survivors out of 7. The favorable outcome of these patients is attributed to expeditious surgery, averaging only 20 to 50 minutes in these critical newborns. The lung is judiciously expanded as the chest is closed, and no thoracotomy tube is required. Postoperative ventilation is thereby enhanced.

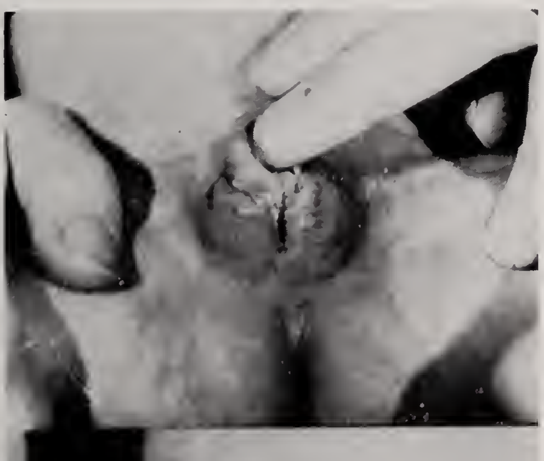


FIG. 12. Intersexual abnormality: female with ambiguous external genitalia.

The details of the cardiac experience at Children's Hospital will form a separate report.

The Neonatal Surgical Unit

The need for a neonatal surgical unit becomes apparent when one reflects upon the scope and complex nature of the problems encountered. Coördinated efforts on the part of the nursing staff, resident staff, and special services, as well as close liaison between the Departments of Surgery and Anesthesiology are essential. Immediate care of the newborn infant rests with the resident staff. Their experience and motivation can determine the ultimate outcome in many cases.

A children's hospital exposes senior residents in general surgery to the concepts of neonatal and pediatric surgical care, preparing them to manage the more routine conditions and to recognize those cases which are best handled in a newborn surgical unit. In addition, training is provided for 2 men each year enabling them to undertake and provide surgical care specifically for infants and children. This will include treatment of complex and life-threatening conditions likely to be encountered in the practice of pediatric surgery.

The Surgical Intensive Care Unit for neonates concentrates the equipment and personnel required to render excellent patient-care. The awareness and attention to details of fluid replacement are fostered in this environment. Gastrostomy feedings may be measured in fractions of ounces. A 5 ml. error in the calculation or administration of intravenous fluid may have a major effect on an infant whose blood volume may be less than 200 ml. In this unit the nursing staff attains proficiency with suctioning equipment and respirators and monitoring devices, thus complementing an ability to make valid observations and render sound judgments. Added to this team are specialists in newborn physiology. Their group is active, not only in the preoperative phases of the care of the newborn but in the critical postoperative period when heat-loss, acidosis, and sepsis may be encountered. In addition, as recovery progresses, provisions are made in conjunction with this group for long-term care.

In addition to the specialized groups alluded to above, numerous other services are available. The personnel in the X-ray Department are experienced in the handling of infants and are well aware of the hazards associated with heat-loss. The technicians are sensitive to the potential difficulties and dangers of neglected intravenous infusions. Constant contact with neonatal disease processes promotes rapid, accurate diagnostic studies.

The Dietary Department is often summoned to assist with the feedings of infants having metabolic defects and unable to tolerate the usual formulas. The willingness and ability of its personnel to provide feedings designed specifically to fit the needs and limitations of these babies may be the factor which initiates recovery.

All major services are represented and available to participate with the Department of Surgery in the care of the newborn. For example, neonatal jaundice is a joint undertaking with the Department of Hematology, as is intersex with the Department of Endocrinology. The medical cardiologists function in close conjunction with the thoracic surgical team.

Deserving special mention is the Department of Anesthesiology. The undertaking of the administration of anesthesia to patients in this age-group can be hazardous under the most favorable conditions. The use of multisystem monitoring, precise control of respiratory volume, temperature control, and continuous awareness of blood loss enables the surgeon to concentrate on the specific surgical problem at hand. Postoperative attention to the potential complications of the lesions encountered, both metabolic and pulmonary, must account for many of the survivors.

Thus, one appreciates the coördinated effort put forth by the Children's Hospital Neonatal Surgical Unit, encompassing many departments, all striving to achieve a standard of excellence in the care of this special group of patients. In addition, the need to train physicians in special diagnostic and therapeutic measures in the baby with surgical disease is recognized and met.

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Patients Needed at Clinical Center

The coöperation of physicians is requested in the referral of patients for the following studies being conducted by the National Institute of Allergy and Infectious Diseases at the Clinical Center, National Institutes of Health, Bethesda, Md.

Neutropenia: Referrals of patients with either chronic or cyclic neutropenia are needed. Studies will be performed to determine the life span, cultural characteristics, metabolic and phagocytic function of granulocytes. Following this, attempts at therapy will be made and experimental drugs may be used.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Sheldon M. Wolff or Dr. David C. Dale, Clinical Center, Room 11-N-232, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-5807 or 496-4964.

Hereditary Angioneurotic Edema: Referrals of patients with proven or suspected hereditary angioneurotic edema are needed. Selected patients with a history typical of angioneurotic edema but with negative family histories will also be studied.

Studies will be made of the immune systems of all patients. In an effort to ameliorate their condition, certain patients will be given experimental drugs.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Michael M. Frank or Dr. John S. Sergent, Clinical Center, Room 11-N-104, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-4964.

All patients will be carefully followed during the course of these studies. On completion of their studies patients will be returned to the care of the referring physician who will receive a summary of findings.

Management of Pulmonary Insufficiency*

MARVIN A. SACKNER, M.D., F.A.C.P.†

PULMONARY INSUFFICIENCY occurs acutely or chronically under conditions which generally include in whole or in part signs of breathlessness, obstruction of airways, and retention of secretions. Institution of proper therapy calls for a prompt integration of the history, physical examination, and laboratory tests.

The features of most historic significance are concerned with sputum and wheezing. For example, it is difficult to make a diagnosis of chronic bronchitis without eliciting a history of sputum production on arising in the morning. A yellow or greenish color to sputum often signifies acute bronchopulmonary infection. Sudden cessation or marked reduction of sputum volume in a patient chronically bringing up sputum may indicate retained secretions or mucoid impaction. Gradual reduction of sputum volume over months or years accompanied by dyspnea may signal the development of pulmonary emphysema. Wheezing is associated with bronchial asthma or bronchitis; it also occurs in severe congestive heart failure. Swelling of the ankles may be the result of cor pulmonale or mechanical obstruction of the inferior vena cava by depressed diaphragms. Knowledge of smoking habits, occupation background, and exposure to noxious gases, fumes, or dusts are helpful in establishing an etiologic diagnosis.

The decision to employ a specific means of mechanical aid to ventilation is most dependent upon the sensorium of the patient. Conservative measures are preferred when the patient is mentally alert regardless of the disturbances in arterial blood gases. The breathing pattern is important in establishing whether reassurance, intermittent positive pressure breathing with bronchodilators, or intubation are indicated. Short gasping inspirations in patients with obstructive airway disease may be caused by an anxiety reaction or acute bronchopulmonary infection. Prolongation of expiration occurs in bronchospasm and in emphysema. Occasionally the sole sign of airway obstruction is vigorous contraction of the abdominal rectus muscles during expiration. Auscultation of the chest for wheezes, rales, and audibility of breath sounds is helpful in the differential diagnosis of bronchospasm, congestion, fibrosis, pneumonitis, and pneumothorax. A tracheal wheeze may result from the tracheobronchial collapse due to emphysema or to upper airway obstruction.

Analysis of the arterial blood gases is a mandatory part of the clinical examination in every patient with pulmonary insufficiency. (A detailed description of arterial blood-gas interpretations appeared in *Medical Times* in 1967.[1]) Important measurements obtained from the arterial blood analysis include pH, carbon dioxide tension (pCO_2), base excess, oxygen tension (pO_2) and oxygen saturation. The blood pH is normally between 7.38 and 7.42. It is affected by a change in pCO_2 and an accumulation of nonvolatile acids or bases. Arterial pCO_2 ranges from 38–42 mm. Hg and is inversely proportional to alveolar ventilation. Base excess is normally zero; a positive value indicates a base excess or a nonvolatile acid deficit, and a negative value indicates a base deficit or a nonvolatile acid excess. The base excess can theoretically be determined by titration with a strong acid to a pH of 7.40 at a pCO_2 of 40 mm. Hg and a temperature of 38°C. In practice, base excess is determined indirectly by calculation from a nomogram with values for pH, pCO_2 and hemoglobin concentration. The base excess should be considered as the indicator of metabolic and the pCO_2 that of respiratory disturbances. A blood pH below 7.38 indicates acidosis. If the pCO_2 is greater than 42 mm. Hg a respiratory acidosis exists, whereas if the base excess is less than -3 (i.e., -4, -5, -6, etc.) a metabolic acidosis is present. A positive base excess ($+3$ or greater) associated with a respiratory acidosis generally indicates that in whole or part the respiratory acidosis has been chronic.

The usual arterial blood gas disorders in pulmonary insufficiency involve hypoxemia and respiratory alkalosis or acidosis. Respiratory alkalosis and hypoxemia are often found in the early stages of status asthmaticus and in atelectasis. Many patients with obstructive airway disease have hypoxemia only. Chronic respiratory acidosis is usually seen in patients with chronic bronchitis alone or as the predominant disease in combined bronchitis and emphysema. Acute respiratory acidosis may occur in patients with preexisting pulmonary diseases who have superimposed infections, retained secretions, narcotic dosage or overdosage, congestive heart failure, status asthmaticus, or pneumothorax. Metabolic acidosis may complicate acute respiratory acidosis in conditions such as status asthmaticus and pulmonary edema.

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* Submitted to the MEDICAL ANNALS by the Washington Heart Association.

† Chief, Division of Pulmonary Disease, Mt. Sinai Hospital, 4300 Alton Road, Miami Beach, Fla. 33140.

A chest roentgenogram should always be obtained in patients with pulmonary emphysema who develop acute pulmonary insufficiency. In these patients pneumothorax and pneumonitis may give few or no physical signs. An electrocardiogram should be obtained routinely, since cardiac arrhythmias are frequent. A gram stain of the sputum smear should be examined immediately to help in the choice of an antibiotic.

In terms of management we have found the following classification of pulmonary insufficiency useful. It is based on (1) the state of the sensorium, (2) obstructive airway signs, (3) signs of retained secretions, and (4) acid-base balance as estimated by arterial blood gas analysis.

Alert—Obstructive airway signs; no CO_2 retention. This is probably the commonest type of pulmonary insufficiency. It is found in status asthmaticus and in anxiety reactions in patients with preexisting pulmonary diseases. Hypoxemia and respiratory alkalosis are generally present. Psychotherapy is by far the most important mode of treatment. The physician must repeatedly assure the patient that breathlessness will decrease if respirations are slowed and if he relaxes. The physician must remain in the patient's presence and give vocal encouragement until this is accomplished. In addition, but not as a substitute, intermittent positive-pressure breathing using slow respiratory flow rates and nebulizing 4 to 8 drops of racemic epinephrine in 5 ml. of aminophylline solution intravenously for 15 minutes every 3 hours may be useful. If psychotherapy is ineffective, sedation must be employed by means of mild tranquilizers to narcotics as indicated. Intravenous steroid and aminophylline therapy are often beneficial. If there is coëxisting metabolic acidosis as in status asthmaticus, initially 1 ampule of $NaHCO_3$ (44.5 mEq.) should be given for every −4 to −5 mEq. of base excess and further requirements followed by serial arterial blood gas determinations.

Alert—Obstructive airways signs; acute respiratory acidosis. This condition develops in certain patients with status asthmaticus, in patients with emphysema and/or chronic bronchitis who develop a bronchopulmonary infection or anxiety reaction. These patients frequently show rapid, shallow respirations and hold their chests in a high inspiratory position. Reassurance should be employed but is not as effective as in those patients without CO_2 retention. These patients should be treated with intermittent positive-pressure breathing until the arterial pCO_2 returns to normal. If bronchospasm exists, intravenous steroids and aminophylline should be employed. Narcotics and sedation are usually contraindicated because of their depressant effects on the respiratory center. However, if the tachypnea persists and if intermittent positive-pressure breathing is fought by the patient, a trial of sedation may be indicated. This type of treatment should be utilized only if the patient is in an intensive care unit under close medical surveillance and if intubation equipment is immediately available with close monitoring of arterial blood gases. Base deficits should be corrected with intravenous sodium bicarbonate.

Alert—Retained secretions; no CO_2 retention. Representative examples in this category include pneumonitis, postoperative atelectasis, and acute exacerbations of chronic bronchitis or bronchiectasis. The best results in terms of removal of secretions are obtained with chest physiotherapy. A trained chest physiotherapist performs shaking and clapping of the chest and postural drainage, and educates the patient in correct coughing. Nasotracheal suction should always be done initially by an experienced physician before turning this task over to nursing since it is often difficult to carry out properly. Deep breathing exercises and intermittent positive-pressure breathing should be used in atelectasis. Heated aerosol is indicated for loosening secretions in large airways, and the ultrasonic nebulizer for small airways. Antibiotics should be administered if the sputum is purulent. Provided the patient remains alert, bronchoscopy is usually not required.

Alert—Obstructive airway signs; chronic respiratory acidosis. Patients with chronic bronchitis and/or emphysema may show this condition. The blood pH is near normal, pCO_2 and base excess elevated, and hypoxemia present. Patients with arterial pCO_2 less than 62 mm.Hg and near normal pH should be maintained on intermittent positive-pressure breathing 4 times a day, or as necessary, at home or in the hospital. Arterial pCO_2 above 62 mm.Hg represents an unstable condition; the patient may become acutely acidotic with minimal stresses. These patients should be hospitalized and given hourly or 2-hourly treatments with intermittent positive-pressure breathing until the pCO_2 falls below 62 mm.Hg. Measures must be taken to keep the pH normal by correcting the coëxisting compensating metabolic alkalosis with saline, ammonium chloride, potassium chloride, arginine hydrochloride, or Diamox® as dictated by cardiac, renal and electrolyte considerations. The goal in therapy is to keep pCO_2 below 62 mm.Hg while keeping the blood pH normal during room-air breathing; it is not to bring pCO_2 down to a normal value of 40 mm.Hg. It is important to ventilate these patients with oxygen concentrations not greater than 30 per cent because respiratory center depression may occur immediately after a treatment with the respirator if higher oxygen concentrations are used. As in other patients with obstructive airway signs, intravenous steroids and aminophylline, chest physiotherapy, and nasotracheal suction are useful adjuncts. This group of patients also frequently have incipient grades of congestive heart failure. Digitalis and diuretic therapy added to the regimen occasionally bring the pCO_2 to normal and partially relieve the hypoxemia.

Stupor—Acute respiratory acidosis. This condition is most likely to occur in patients with obstructive airway disease who have been given sedation, develop an acute bronchopulmonary infection, or have incomplete elimination or anesthetics or neuromuscular agents following surgery. These patients should be treated with continuous intermittent positive-pressure breathing until the pCO_2 returns to normal. A volume-limited respirator with a mask is preferred since leaks can be overcome by increasing the volume delivered by the machine, whereas pressure-limited respirators do not cycle well if inflation pressures greater than 25 cm. of water need to be employed. If the latter occurs and a volume limited respirator is unavailable, intubation with a cuffed endotracheal tube should be done. Bedside bronchoscopy is useful. Tracheostomy should be considered if there are copious secretions and if the patient cannot be taken off the endotracheal tube after 96 hours. Since gastric ileus occurs in many of these cases the gastric contents should be emptied by a nasogastric tube.

Stupor—Obstructive airway signs; acute and chronic respiratory acidosis. These patients are best treated by continuous controlled ventilation by a mask with a volume-limited respirator. This can also be handled with a pressure-limited respirator, but one must be prepared to do more frequent monitoring of arterial blood gases and ventilation. However, intubation is usually necessary when the latter type of respirator is employed. The goal of therapy is to reach a normal pH over a 6- to 24-hour period, not a normal pCO_2. Rapid correction of arterial pCO_2 to normal levels with alkaline pH in these patients is associated with a fatal encephalopathy. Adjunctive therapy includes chloride replacement or bicarbonate diuresis, antibiotics, nasogastric suction and diuretics. If secretions are thick and copious and a tracheostomy employed, lung lavage should be done every 4 hours with a 5 ml. solution of equal parts of intravenous $NaHCO_3$ solution and saline.

Coma—Respiratory acidosis. These patients should be bronchoscoped at the bedside, secretions removed, and a cuffed endotracheal tube inserted. They should be placed on continuous controlled ventilation with a volume-limited respirator. The goal of therapy is restoration of normal pH. Depending upon the base excess, replacement of chloride or bicarbonate should be carried out. Nasogastric suction, antibiotics, diuretics, and tracheostomy are useful adjunctive measures.

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Generic Equivalency: Does It Exist?*

MAJOR RONALD J. PAYNE, MC, USA†

It is estimated that one billion prescriptions were filled in the United States in 1967. The average cost was $3.43, and total sales by the drug manufacturers was about $3.5 billion. About 92 per cent of the prescriptions were prescribed by trade name and 6 per cent generically, and the remainder were compounded.[1] These figures give some idea of the scope of what former FDA Commissioner Goddard called "the equivalency debate."[2] For him the topic of price was not considered, but the discussion did include evaluation of different drug products and the right of physicians to prescribe the way they choose. In most circles the debate is more encompassing and does include price considerations.

Standards for drugs in this country are established by the United States Pharmacopeia (USP) and National Formulary. The Food and Drug Administration (FDA) controls the release of new drugs and regulates those on the market. Agents must not only be safe but must have demonstrated effectiveness to qualify for the pharmacist's shelf. The USP establishes minimal purity and chemical standards in addition to general requirements for some dosage forms, such as product uniformity and dissolution rates. Available data to support these requirements are gleaned from the literature, FDA studies, and additional information supplied to FDA by the drug houses.

It is obvious that the producer of a new agent should wish to protect his investment. Currently the industry states that it requires about 7 years of research and millions of dollars before a new product can appear on the market. Only a small number of those studied ultimately reach commercial production. Manufacturers expended $476 million in 1967, and 25 new items were approved for release. According to the "Drug Industry Fact Book"[1] none of these agents came directly from a source independent of the industry. Producers of a new drug have 17 years of exclusive rights from the Patent Office; during this interval they may establish a trade name for their product or license other firms to produce it by various names.

Varley[3] objects to the term "generic equivalency" because it is not specific and has broad implications which cannot be supported by definitive studies in most cases. He proposed 3 kinds of equivalency: chemical, availability, and therapeutic. By current definition "generic equivalency" refers to agents which have "chemical equivalency" and implies that they are therapeutically equivalent. This supposition is rarely supported by scientific validation. Many agents meet the USP standards for chemical content of the active ingredient (which in many cases are really minimal, e.g., penicillin is 85 per cent pure when most products are 98 per cent pure). Availability refers to the amount of active ingredient which is available to the tissues. Goddard is aware of less than 24 cases where available equivalency differs in products which are chemically equivalent and supposedly "generically equivalent."[2] More significantly, and for the clinician the only real question, the problem of therapeutic equivalency has hardly been approached; it must be resolved but will require great effort and expense.

Much of the present controversy arose from some studies published in the early 1960's in *The Medical Letter*.[4] Supposedly generically equivalent items were obtained from retail pharmacists, tested against official standards, and prices compared for each unit package. The following table indicates the drug, number of lots meeting official standards, indicated as USP (compared to the number tested), and the price range. The most commonly used trade-named item was not always the most expensive, and some products were far below standard:

Drug	USP/No. Lots Tested	Price Range
Secobarbital	26/35	$5.25–$18.30
Digoxin	22/23	3.95– 10.00
D-Amphetamine	34/38	0.85– 22.60
Stilbestrol	35/38	0.70– 10.80
Penicillin G	42/42	0.95– 9.90

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* This paper has been reviewed by the office of The Surgeon General, Department of the Army, and there is no objection to its publication. This review does not imply any endorsement of the opinions advanced or any recommendation of such products as may be named.

† Department of Medicine, Walter Reed General Hospital, Walter Reed Army Medical Center, Washington, D. C. 20012.

The impact of these studies was felt by every pharmacist and physician in this country. There was great pressure toward acceptance of generic prescribing. Most institutions, especially Federal and State governments, took advantage of apparent savings by purchasing lower-priced items. These dramatic price differences did not benefit the private patient because of pricing methods employed by most pharmacists. Various policies of pricing, which include a professional fee based on the nature and quantity of the item dispensed, influence the price of a specific prescription. This factor often makes the wholesale cost of the medication a minor factor in its cost to the consumer. Another point frequently overlooked by those advocating generic prescribing is that for many common items there is a single manufacturer or only 1 brand is available.

In our institution an opinion survey among the pharmacists indicates that this applied to 5 of the 10 most-often dispensed drugs. In private practice in this area opinion indicates that 7 of the 10 most-often prescribed drugs are available from a single producer. These practical considerations frequently eradicate hopefully anticipated saving for the consumer despite the efforts of the physician who prescribes by generic name. The Task Force on Prescription Drugs had a Master Drug List of 409 products. Only 63 were available on a generic basis, with only 1 in the top 10 dispensed.[5] Another survey indicates only 4 of the top 50 were generically prescribed and another 4 could be obtained from other manufacturers.[6]

Physicians do not prescribe raw chemicals for patients. The ingested product is prepared in suitable dosage in such forms as tablets, capsules, elixirs, or injectable solutions or suspensions. The physician is obliged to become more sophisticated in his knowledge of how such preparations are made and how this can influence the effectiveness of the active ingredient. An editorial appeared in *The Journal of the American Medical Association*[7] which listed factors modifying the final product. Some items were taste, appearance, solubility, pH, particle size, disintegration ability, stability, tablet compression and coatings, and impurities. Examples could be given wherein single or multiple factors influence the "therapeutic equivalency." Physicians should be aware of them because they make a difference in the patient. Many practitioners have noticed that they now write for 25 mg. tablets of spironolactone when they formerly requested 100 mg. tablets for the same effect. This is simply the result of micronizing the powder. Conversely, capsules containing large particles of nitrofurantoin are being advertised as more effective than those with smaller particles.

There are many other factors involved in the manufacturing process which are not readily apparent. The compressed tablet is the most commonly-prescribed dosage form. In addition to the active ingredient there are binders (which hold the powders together), disintegrators (such as starch to facilitate fragmentation in the stomach), and additional flavors, oils, and lubricants.

Three general processes are used in commercial production. The simplest is direct compression; this technique can be used for only a few tablets such as sodium chloride. The second process is called slugging and involves making large, coarse tablets which are ground to fine grains and then compressed to meet specifications. Antacids are usually made in this manner. The most common and complex method requires wetting the powders with a binder, then sieving the mixture through the proper-sized screen. These granules are dried, and then the tablets are punched.

Tolbutamide has been studied more extensively in this area than other drugs; it can serve as a prototype. In 1963 there were reports in the Canadian literature[8] that patients placed on generic tolbutamide went out of diabetic control. This was restored by returning them to the trade-named product. Some recent studies[3,9] indicate that minor changes in the amount of inert ingredients, such as disintegrators (in the form of starch or vee-gum), can alter the "available equivalency" even though the chemical equivalency is intact. Increasing the starch from 6 to 7 per cent decreased the disintegration time of the tablets from more than 30 minutes to 2.3 minutes. In normal volunteers an altered tablet with one-half the amount of disintegrator gave blood levels of 1.5 mg. per cent, compared to 7.0 mg. per cent for the routinely-produced, trade-named product. The blood sugar at 90 minutes fell only 2 mg. per cent with the generic product, compared to 14 mg. per cent for the standard item.

Some obvious further steps were undertaken in Canada in 1965. A pharmaceutical analysis of 26 lots from 5 manufacturers was performed which met the Food and Drug Directorate requirements and were considered generically equivalent.[8, 10] The amount of a 500-mg. tablet dissolved in simulated gastric juice at 1 hour ranged from 15.3 mg. to 333 mg., and the tablets disintegrated in from 1 second to 83 seconds. A double-blind study on 25 stable diabetic patients, who had been on the drug for a prolonged period, demonstrated only 1 brand that showed a statistically significant greater effect on fasting blood-sugar levels.[11] They concluded that all of the products tested were satisfactory and that the differences were not of clinical importance. These studies indicate that the differences in tablet formulation did not have significant therapeutic effects and that chemical equivalency was the same as therapeutic.

Chloramphenicol has been studied in this manner recently; these results have made a significant impression on official agencies. Because of some wide variations between the generic products and the older trade-named ones, the former were removed from the market pending further tests. Glazko[12] reported dissolution rates varying from 9.3 to 91.8 per cent at 10 minutes and 20.4 to 98.1 per cent at 30 minutes. The urinary excretion in volunteers at 48 hours was 52 compared to 82 per cent. Blood levels analyzed by both photometric and bacteriologic methods at 1 hour were 0.6 mcg./ml. compared to 9.4 mcg./ml. No clinical trials in patients having significant infection have been reported.

Conclusions

At this time it is not possible to answer the question of whether or not generic equivalency exists. It has been suggested that the term be abandoned for more meaningful and specific terms such as chemical, availability, and therapeutic equivalency. Because a product is equal to another in one of these areas does not give one the right to assume that it is the same in others. Many factors besides the actual dosage form can influence how a patient responds to a drug, and these have not been adequately considered. There remains much to be learned, and this will require laborious clinical investigations. The ethical implications of human testing of "generic equivalents" are unanswered when there exists a product of known efficacy.

Some general points are clear. The physician cannot relinquish his responsibility to prescribe what he feels is the best drug for a patient. Purchasing agents should not be able to frustrate this responsibility by purchasing on the basis of the lowest generic bidder. Manufacturers deserve a fair compensation for their risks, but their profits have been among the highest of any major industry.

It is hoped that the FDA will be able to insure "therapeutic equivalency" of drugs that bear their stamp. Then and only then will FDA-approved generic drugs be judged on the basis of economy. Until the problem is resolved each physician must prescribe according to the dictates of his conscience. Price alone will never be the determining factor in prescribing drugs.

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Achalasia of the Esophagus Simulating Pericardial Effusion—A Problem in Cardiographic Diagnosis*

Report of a Case

SUSHIL K. SAHA, M.D.,† MOHAMMED ISMAIL, M.D.,† AND JOHN B. JOHNSON, M.D., F.A.C.P.‡

ROENTGENOGRAMS in some cardiovascular disorders may, at times, appear so impressive and characteristic that the noncardiac clinical history may be inadequately explored and the physical signs may not be critically assessed in reaching a working diagnosis.

Pericardial effusion in the absence of a pericardial friction rub is often first suspected by the chest roentgenogram. If the characteristic cardiac silhouette is confirmed on fluoroscopy by almost complete absence of visible pulsation of the right and left cardiac borders a diagnosis of pericardial effusion must be seriously considered. The case to be presented was a source of confusion because the roentgenographic and the fluoroscopic findings suggested pericardial effusion.

Report of Case

A 60-year-old man was admitted to the Freedmen's Hospital with the history of intermittent palpitation and increasing shortness of breath associated with substernal chest pain for several years. The pain was mostly associated with palpitation but was not specifically related to exertion or food intake. It was sharp, without radiation, and usually subsided with spontaneous remission of the palpitation. There was a history of exertional dyspnea and paroxysmal nocturnal dyspnea. There had been an abdominal operation 8 years previously at another hospital. There had been recurrent attacks of pneumonia with atelectasis of right lower lobe.

The general appearance was that of a moderately dyspneic, middle-aged man. The blood pressure was 150/80 mm. Hg. The jugular veins were distended. Carotid pulsation was equal bilaterally. The heart and lungs appeared normal, but there was increased dullness on the right border of the heart.

The venous pressure was 144 mm. water, the arm-to-tongue circulation time 19 seconds. An old right paramedial scar on the anterior abdominal wall was present. The abdomen was soft and nontender. The liver was felt 2 to 3 cm. below the right costal margin. Otherwise the examination was negative.

The hemoglobin was 10 Gm., with a hematocrit of 32 per cent. VDRL was positive 1:16. Other laboratory findings, including WBC, BUN, FBS, serum cholesterol, cardiac enzymes (SGOT, LDH) and urinalysis, were within normal limits.

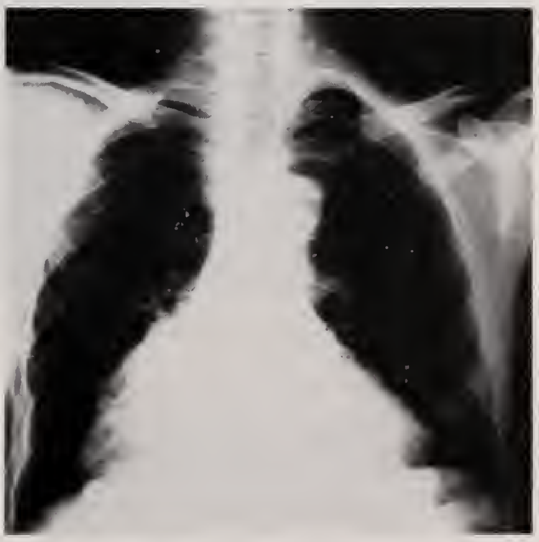

FIG. 1. Posteroanterior view of chest showing enlarged cardiac shadow interpreted as pericardial effusion.

A chest X-ray film (figure 1) presented such a dramatic appearance that fluoroscopic study was done at once in search of nonpulsatile cardiac borders as might be seen in pericardial effusion. When the right cardiac border was demonstrated to be completely quiet and the left border with only questionable pulsations the diagnosis of pericardial effusion was more seriously considered.[1] The lack of jugular-vein distention, normal venous pressure, and the easily audible heart tones temporarily faded in importance in the presence of these X-ray and fluoroscopic results.

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† Resident in Cardiovascular Diseases, Freedmen's Hospital, Washington, D. C. 20001.

‡ Professor of Medicine, Howard University College of Medicine; Director, Cardiovascular Laboratory, Department of Medicine, Freedmen's Hospital.

Angiocardiographic study demonstrating clearly the superior vena cava and the right atrium well inside the "cardiac silhouette" seemed to confirm pericardial effusion (figure 2). In addition to these roentgen studies the patient had symptoms of heart disease, and the electrocardiogram showed incomplete right bundle-branch block with nonspecific ST-T changes. About this time the hospital report of the previous abdominal operation was received. The report indicated that in 1960 a Heller operative procedure for achalasia of the esophagus had been performed. This operation had eliminated this patient's symptoms of dysphagia. An esophagram done at this time demonstrated a widely dilated and tortuous esophagus, the distal portion of which constituted what previously had been interpreted as a quiet, bulging pericardial sac (figure 3).

On July 24 at about 1 a.m. the patient developed a paroxysmal atrial tachycardia with a rate of 170/min. which terminated readily on carotid sinus pressure (figure 4). Additional studies following discharge included a Master's exercise electrocardiogram, which was negative, and esophageal studies. One-tenth normal hydrochloric acid esophageal infusion failed to reproduce symptoms of any kind. Subcutaneous administration of 5 mg. of bethanechol chloride (Urecholine®) resulted in nausea and some vomiting, but there was no precipitation of chest pain and no tachyarrhythmia.

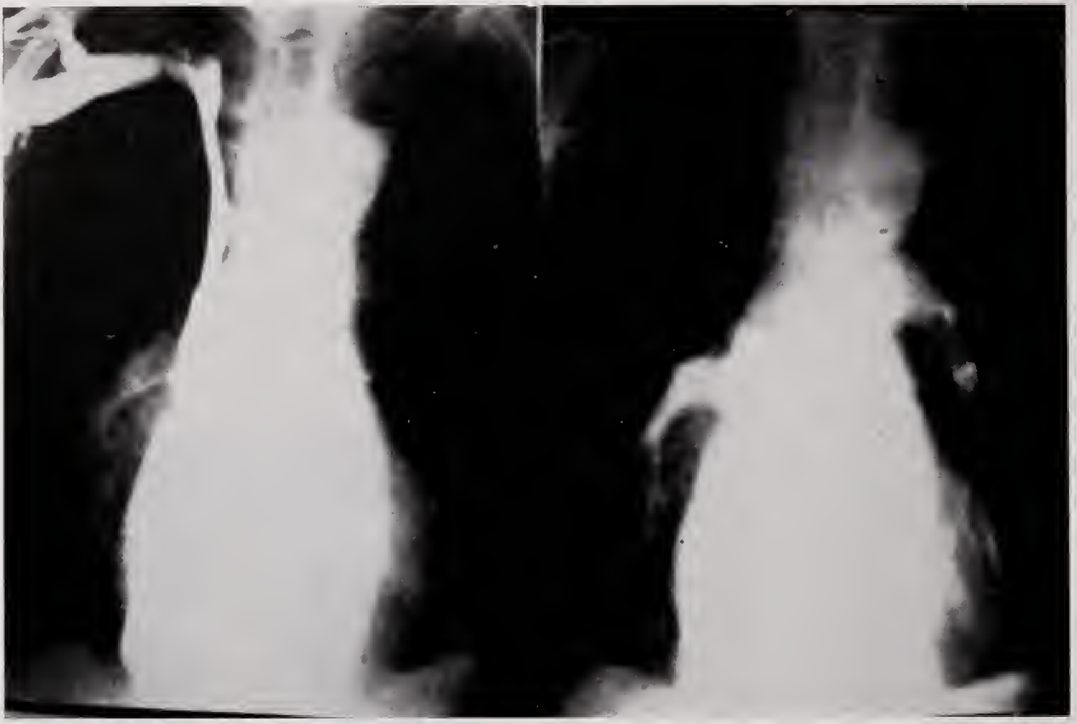

FIG. 2. Angiocardiograms showing superior vena cava and right border of heart well inside cardiac shadow.

Discussion

Dysphagia as the common presenting symptom in advanced untreated achalasia is remarkably constant. The absence of this symptom and our failure to clarify the history in reference to the abdominal operation resulted in a failure to consider achalasia.

The admission symptoms of palpitation, substernal pain, exertional and paroxysmal nocturnal dyspnea along with pathologic changes in the electrocardiogram strongly suggested heart disease as the basis for this patient's symptoms. Pericardial effusion was initially suspected on the basis of the roentgenogram and fluoroscopic findings.

The diagnosis of achalasia is now unquestioned. However, it is our impression that the admission symptoms were of cardiac origin rather than secondary to achalasia.

Cardiac arrhythmia and chest pain associated with achalasia are not uncommon.[2] Peptic esophagitis may also produce chest pain simulating angina pectoris.[3] In this patient, however, the esophageal infusion of tenth normal hydrochloric acid and the administration of Urecholine both failed to produce chest pain or tachyarrhythmia. The chest discomfort during tachycardia is prob-

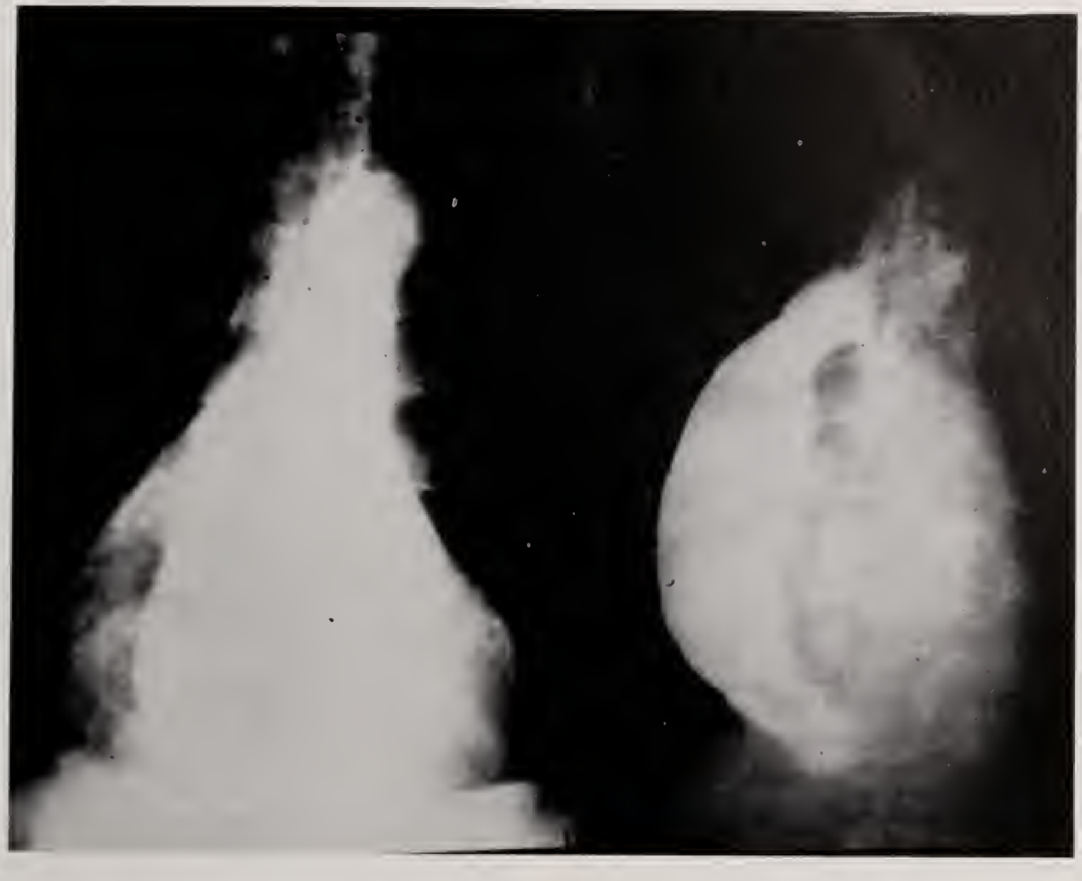

FIG. 3. Barium swallow of esophagus showing dilated esophagus occupying right border of cardiac shadow interpreted as pericardial effusion on plain X-ray film.

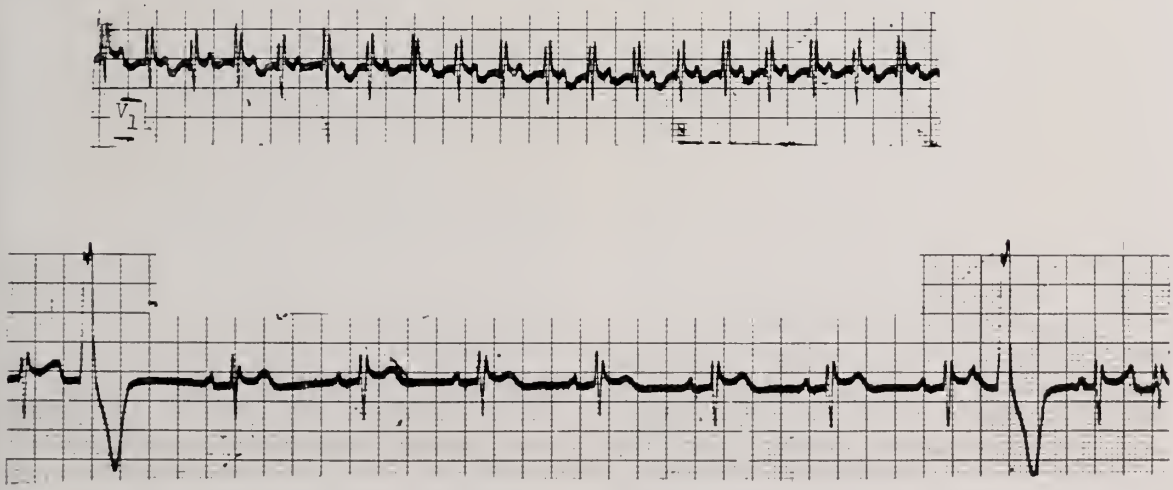

FIG. 4. Upper strip showing atrial tachycardia with rate 194/min. Lower strip showing sinus rhythm after carotid sinus pressure.

ably related to reduced coronary perfusion, not uncommon in tachyarrhythmias.[4]

Summary

A 60-year-old man was admitted because of cardiac symptoms and initially thought to have pericardial effusion because of the striking appearance of the roentgenogram and the fluoroscopic study. Eventual studies demonstrated that the remarkable X-ray appearance of the cardiac silhouette was due to a normal-sized heart with a

(Continued on page 498)

Fight or Flight Response in Clinical Practice*

ACORS W. THOMPSON, M.D., F.A.C.P.†

Man has spent approximately 99 per cent of his time on earth roaming and competing with other meat-killers for available supplies of game. After more than 2 million years of killing and avoiding killers, he has been trying to civilize himself for perhaps 5,000 years. Although he has developed coöperation and social organization to an unprecedented degree, he still harbors opposing tendencies which result in his frequent undoing. One need only read the daily newspapers to verify this. Our responses in times of stress are still identical to those of people in prehistoric times. Suspicion of strangers, hatred of people who appear different, a limited ability to care about anyone outside his immediate environment, aggressiveness, fear of uncertainty, and fear of being wrong are reactions which precipitate stress and are dangerously inappropriate to our society. Despite man's culture, capabilities, and civilization, his body responses cling to the past.

For example, when fear or anger is precipitated, the body reacts by producing a "fight or flight" response. Primitive man could give this neuro-emotional response muscular expression to solve his problems and dissipate the energies generated. Modern man continues to have these same "fight or flight" responses. Unfortunately, he is unable to relieve himself as easily as his predecessor. What then can modern man do to protect himself from the all-too-often detrimental effects of this response? What is the nature of the "fight or flight" response? Basically, its purpose is self-preservation, imagined or real. For example, how often do people concern themselves with financial problems? Money matters can produce great stress. It is frequently said that the pocketbook nerve is the most sensitive nerve in the body. How many millions carry that rather lethal instrument, the watch? It kills because it produces a sense of urgency all too often self-sustaining. Look at the people who rush to and fro at work and at home "trying to beat the clock." In most instances it is the clock that beats them. There are tremendous stimuli placed upon the human neurological system by our modern methods of communication—radio, television, newspapers, periodicals. Although it is indeed a wonderful situation to be enlightened, it is not desirable to be overwhelmed. And this too often is the case. The pressure is so great by these media that one does not have the time to collect all the facts. There is no time taken or given to assess the relative value of what has been learned. All too often a lot of trivia has been recorded. One hears the expression frequently: "There is so much to learn but I don't have the time." Solitude, a zone of time and space free from outside pressures, is the great omission in the American way of life. Yet it is so necessary. Its absence is a factor in the accumulative effects of stress.

What happens to man's body under stress? The ability to react and adapt to stressful situations is related to adrenal function. Neural and hormonal transmitters stimulate the hypothalamus. Impulses from the hypothalamus stimulate the adrenal medulla to release epinephrine which in turn stimulates the anterior pituitary gland to increase the output of ACTH. The adrenal cortex is then stimulated by the ACTH to secrete corticosteroids which act on target tissues exerting antistress effects. Other factors include the elevation of blood lipids and carbohydrates, elevation of heart rate and blood pressure, increased activity of the muscles of the bowel and bladder, blanching of the cutaneous structures, and increased flow of blood to the muscles. It is obvious from the body's response to a stressful situation, physical or emotional, that some form of energy must be liberated or expressed to resolve the precipitating problem.

Unfortunately, muscular effort cannot solve many of modern man's problems which precipitate "fight or flight" responses. This situation is in great measure a major factor in the cause of that group of diseases which may be termed diseases of civilization, namely, hypertension, coronary artery disease, arteriosclerosis, stroke, obesity, ulcers, and colitis. What can modern man do to resolve this problem? I would propose 3 methods. Any 1, combination of 2, or all 3 methods may be required in any single situation. Rationalization, medication, and exercise are my 3 proposals.

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† Clinical Assistant Professor of Medicine, Georgetown University School of Medicine; office: 115 Park Ave., Falls Church, Va. 22046.

Let us discuss rationalization first. If one recognized those things which make him nervous in his environment, and they are of frequent occurrence, it is conceivable and reasonable to assume that he can rationalize his response when such a situation arises. All of us at times get nervous or irritated by menial situations which really should not make us respond in excessive manner. Yet they do. Then, too, there are situations of such intensity that severe stress is imposed. Here rationalization may diminish the response to some degree. Rationalization, however, must be a continuing process in order to alter one's response to specific situations.

Medication is obviously the "in" form of treatment in our society today. When people are nervous or upset they resort to a number of ways to alter their responses so that they do not feel them. They consult their friendly family doctor, who obliges them by cutting their head off from their body chemically and clouding their consciousness from reality. Under certain circumstances this is unquestionably valid treatment. But I admit, and believe that you agree, that this approach to stressful situations is overemphasized in our society. It beggars of inadequacy. It means we don't have the courage to face reality. More effort should be made to avoid this approach.

Exercise is nature's way of altering the "fight or flight" response. If a response has been precipitated, dissipate it through exercise. Many know the nervousness prior to an athletic event. They also know that once one actually participates, the sensation disappears. The sensation of nervousness is a means of stimulating one to action and perhaps to achievement. It is unfortunate that it so often stimulates us to go astray. We prefer to block it out by medication or alcohol or, as an old expression goes, "stew in our own juice." And indeed this would be a dull world if one did not have the capacity to get nervous. We would probably blow our brains out from boredom.

One of the problems in relation to exercise that must be critically evaluated and understood is that of man's interpretation of fatigue. A lot has been written about it and yet it remains a very elusive subject. In 1967, 800 psychiatrists, physicians, and sociologists met in Paris for 4 days to define fatigue but were unable to do so. Nonetheless, we must cope with the problem of fatigue if we are to recommend exercise in the treatment of patients. Physical tiredness has recognizable physiologic and biologic components (muscle pain, tremor, accumulation of lactic acid). Emotional tiredness is more elusive. It can be an escape mechanism, a means to avoid work or a stressful situation. The symptom of fatigue is one of the commonest complaints and most difficult to interpret. It is true that fatigue can be the result of disease. For this reason the patient consults his physician. Fortunately, the great majority of individuals have no disease, their fatigue being predominantly emotional in origin and rarely physical, i.e., due to overactivity. This then leaves very few patients who can truly attribute their fatigue to disease. It has been interesting to note how many individuals stress how exhausted they are and how hard they have worked. It should be emphasized that the degree of fatigue does not necessarily relate to the amount of work accomplished. Take 2 individuals, one who enjoys his work and one who detests his work; the latter will fatigue more quickly. Boredom is the major factor in this instance. Fitness is another factor. One who is fit will be able to continue for a longer period of time.

In modern society most of the physical labor has been taken out of our daily work, i.e., the type which burns up calories. Our minds are being worked overtime, our bodies not at all. Because of the lack of muscular expression during the routine day we are keyed up and fatigued at the same time. I have noticed a very interesting phenomenon in this area. Government workers drink coffee, a stimulant, most of the day into the afternoon, and then on their return home resort to drinking varying quantities of alcoholic beverages, a depressant, to relax. Interesting—stimulants in the morning, depressants at night! Would you be surprised if I told you that some vigorous rhythmic exercises would relieve you of your tension and fatigue? Exercise to relieve fatigue? Ridiculous—but true! Earlier I said, "If a stress pattern has developed it must be given muscular expression." Now if your job requires a tremendous caloric output the relief of your fatigue is best gained by rest.

I sincerely hope by now that you are keenly aware of the necessity for adequate physical responses to neuro-emotional stimuli. If the organs of response are ineffective due to the lack of conditioning or to disease, grave problems may arise. Each person instinctively has the desire to be effective in whatever he does to maintain the dignity of soul and self-respect. If he is unable to do this, something is lost and he becomes an ineffective person, a burden to himself, his family, his community. Anxiety and fatigue set in and inadequacy of response becomes chronic. Each of us has his own personal circumstance; therefore, requirements for physical fitness vary. I do not think that great strength is of importance although there are persons who feel that it is. The major quality of fitness in my estimation is that of endurance, i.e., the ability to perform for a long period of time without becoming unduly fatigued. This requires rhythmically performed effort at submaximal level for a sustained period of time. By graduated increases one develops greater tolerances for stress. This improves the mechanical efficiency with which muscular performance is executed, thus reducing the oxygen required to do this work. Training leads to better integration of the cardiovascular and respiratory responses to the extra demand. Training slows the rate of the heart at rest and after exercise below that in the untrained person. However, the maximum heart rate which can be developed is not increased. The amount of oxygen available to the body for each stroke of the heart for a given workload is a function of the heart rate and chamber size. Training reduces the rate and the size of the heart to meet a given workload. This means that the heart rate is slower both at rest and at any given workload in the trained as compared to the untrained individual.

This information can be used to benefit those people particularly who have no evidence of heart disease. Exercise does indeed alter the adverse effects of the "fight or flight" response and delays the onset of fatigue. This should be used as a reasonable and rational explanation of why exercise is necessary to maintain their effectiveness in modern society.

CAP Laboratory Evaluation Program

An opportunity for physicians to evaluate their own laboratories for proficiency and quality control is being offered in a new Office Laboratory Proficiency Evaluation Program designed by the College of American Pathologists for general practitioners, internists, pediatricians, and others.

Dr. Russell J. Eilers, Chairman of CAP's Standards Commitee, said the Proficiency Evaluation Program is directed to the physician who does limited laboratory work for his patients and to small group practices which have laboratories providing limited laboratory services.

Each mailing will contain: (1) a whole blood specimen for a hemoglobin determination, (2) a lyophilized chemistry specimen for a glucose and BUN determination, and (3) a lyophilized urine specimen for specific gravity, protein, reducing substances, bile, and hemoglobin.

Cost of the 1969 testing packet is $45 and includes 2 mailings of specimens—one in September and the other in November.

Dr. Eilers explained that the office laboratory program "will serve as an external quality control program and assist the laboratory in evaluating currently used methodology and procedures. It will indicate outdated methodology and pinpoint the need for change through a list of corrective steps coded in the evaluation report."

Further information on the 1969 Office Laboratory Proficiency Evaluation Program may be obtained from CAP, 230 North Michigan Avenue, Chicago, Ill. 60601.

Problem in Diagnosis of Achalasia of Esophagus—Saha et al

(*Continued from page 495*)

superimposed dilated, tortuous esophagus, the result of achalasia.

A Heller operation 8 years previously had resulted in the disappearance of dysphagia, the cardinal symptom of advanced achalasia. A more detailed past history of the gastrointestinal tract, the normal heart sounds and venous pressure, along with the absent gas bubble in the stomach by X-ray,[5] might easily have eliminated the initial confusion and some of the more expensive diagnostic studies. The patient's admitting symptoms appear to be exclusively related to the heart, but there was no evidence of pericardial effusion.

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Charles H. Liebermann, M.D.

An Early Russian-born Physician of Washington, D.C.

SAMUEL H. HOLLAND*

ABRAHAM LINCOLN, shot on April 14, 1865, was attended in his last hours by Army doctors and by his Personal Physician, Dr. Robert King Stone; he died on April 15. Among those present were Surgeon General Joseph K. Barnes, Dr. Charles S. Taft, Dr. C. H. Liebermann, and Dr. Charles A. Leale, a young Army surgeon, who was in the theater when Lincoln was shot and was the first to reach his side."[1] A small amount of hair from the area surrounding President Lincoln's wound was removed by Dr. Liebermann and given by him to General Barnes. The hair from the wound area was later contributed to the Army Medical Museum.[1]

The enumeration of the persons present at the bedside of the dying President differs slightly from text to text; the name of Dr. Charles Liebermann, however, appears in all the reports.[1, 2, 3] Otherwise, his name seems to have been completely forgotten by writers of medical history. Who was Dr. Liebermann?

At the time of President Lincoln's death Dr. Liebermann was President of the Medical Society of the District of Columbia and a very prominent surgeon. His record of achievements is engraved in the history of the medical profession of the District of Columbia as well as in the community at large. Yet, he was born in a distant land, and when he arrived in the United States he already had behind him a picturesque record of revolutionary activities against the then existing autocratic régime of the Russian Empire, including escapes from imprisonment. Also, he had had many years of intensive study in the universities of his native land and of Germany, and considerable medical and surgical experience in European clinics under the immediate direction of men who made medical history.

Carl Heinrich Liebermann, or, as he was known in later years, Dr. Charles H. Liebermann, was born, September 15, 1812, in the city of Riga, the capital of Livonia, one of the so-called German Provinces of Russia. Livonia, presently known as Latvia, is located on the eastern shore of the Baltic Sea. It was conquered by Russia in the 18th century, gained its independence after World War I, and is at present one of the United Soviet Socialist Republics. For centuries it has been a conglomerate of various ethnic groups—Letts, Germans, Poles, Jews and Russians, with their variety of languages, religions, and cultural backgrounds. Dr. Liebermann undoubtedly inherited the blood, languages, and cultures of several of these national strains.

His mother was a Radetzky, of that family which has given famous names to German history, one branch of the family Austrian, the other, his mother, Polish. His father held the position of Surgeon in the Russian Army. Dr. Liebermann was left an orphan at an early age under the guardianship of an uncle.

He was educated at Riga in the usual course of the Gymnasium, after which he entered the University of Dorpat, near St. Petersburg, in 1832 for the purpose of pursuing his studies in the natural and other sciences. From Dorpat he went to Wilna where he pursued medical studies for a short period. Returning to Dorpat, he continued his studies in medicine, and while he was thus occupied a Polish revolt broke out. Burning with revolutionary ardor, Liebermann joined a band of students with the object of assisting the oppressed people. Armed with scythes, old muskets, and whatever weapons could be found, the students marched rapidly to the Polish frontier and, crossing it, advanced toward a town which afforded them the opportunity they wanted. With cries of triumph, waving their weapons in the air, they rushed through the gates. But once within, the gates were suddenly closed; the town was already in possession of the Russians, and the young patriots were prisoners. Liebermann was hurried into Russia and flung into prison, preparatory to being sent to Siberia.

One episode of his imprisonment in Russia deserves to be placed in this narrative.[4] Among young Liebermann's fellow-prisoners was a Polish countess, who took great interest in him. She made fruitless efforts to arouse him from the state of despondency in which he had been thrown by the prospect of a long imprisonment or of exile to Siberia.

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* Executive Vice President, Jewish Historical Society of Greater Washington, 1330 Massachusetts Ave., N. W., Washington, D. C. 20005.

One day she called young Liebermann's attention to a convoy of prisoners in the prison yard on their way to Siberia. Among them was a man chained to the axle of a wagon, in rags and covered with dirt, crouching on the ground and eating, with apparent relish, a piece of black bread.

"That man you see there," she said, "is a Polish prisoner of rank. If he can endure such cruelty and misery and yet live, surely you should be able to bear your suffering, which is so much lighter than his, with more equanimity than you do." This had the effect of rousing young Liebermann from his apathy and gave him courage and hope to wait for his release.

After some time, with the assistance of outside friends, he and his companions found means of escape, and with the aid of expert guides, furnished by their friends, they were enabled, after marked hardship and danger, hiding in the woods, covering themselves with leaves, and by using various means of concealment, to escape the vigilance of the patrol of Cossacks who were scattered in great numbers along the frontier and to cross into Prussian territory and reach Koenigsburg. Thence they passed to Berlin, only to learn that but a few days before their arrival a treaty had been concluded under the provision of which they could not be admitted to the University of Berlin as students without the consent of the Russian Ambassador at the Court of Prussia. This they found impossible to obtain and were compelled to enter themselves as military students, thus virtually binding themselves to serve in the Army.

After studying in the military medical schools, or under military supervision, for about 18 months he was enabled to enter the University through some influence exerted by his family at St. Petersburg.

He had been at Berlin pursuing his medical studies for 3 or 4 years when the Emperor Nicholas paid a visit to his father-in-law, Frederick William III. On the occasion of this visit, at the end of 1835, the students were notified that the Emperor desired all his subjects among them to present themselves at the Russian Embassy. Accordingly, at the appointed time, about 80 presented themselves, among them young Liebermann. The Emperor entered the room and made a short, stern speech, informing them that any of the rules of the Empire transgressed by them while in Berlin would be punished with far greater severity on their return home than if violated at home, and he told them that any of them desiring to return home could receive passports do do so. Of this privilege, Liebermann, after having received his degrees, availed himself and returned to Riga in 1836. The pardon proved to be the following Ukase: "That all the property we may possess shall be confiscated and administered by the Crown; we shall remain under the surveillance of the Secret Police for 8 years, to be deprived of all the privileges of the higher classes and to be put upon the list of common citizens; and if during the time shall continue faithful subjects, may expect the mercy of the Emperor."

Remaining home for about a year, he reëntered the University of Dorpat. While vacationing with some of his student friends he visited various schools and universities in order to become acquainted and compare views with his contemporaries upon politics and other matters in which they might be mutually interested. During this expedition while at Kivos they were unexpectedly arrested and imprisoned in a vast and ancient building (about 300 years old) used as a prison, the lower story for criminals of the worst sort, the upper for political prisoners, where Liebermann was placed. The only cause assigned to him and his associates was that they were arrested as restless spirits and suspicious characters. After remaining incarcerated about 2 months, with visions of liberty continually in mind, he was released through the influence of friends at Riga and Dorpat. Through his uncle, who was his guardian and who appears to have had some influence with Count Pahlen, a powerful noble high in the favor of the Emperor, he obtained leave to travel abroad for a period of 3 years through certain countries of Europe and received passports accordingly, those places tinctured with liberal or republican ideas being carefully excluded.

Arriving at Berlin he entered the University again at the beginning of the winter session of 1837, and after remaining 2 sessions more, reported himself for examination for the degrees. He fulfilled the requirements for admission to the Fellowship of the University of Berlin (1837) and the Doctorate of Medicine degree (1838).

The latter was a mere title which enabled its possessor to devote himself to medical literature or to be a professor of the Theory of Medicine, but to practice medicine the candidate had to remain and exercise for a length of time in the clinical hospitals. For that purpose he remained nearly 2 years longer at the University. The final documents he received in April and June, 1840.

Instead of returning to Russia Dr. Liebermann went to Holland and then to England. When he entered Holland he felt as if he had drawn his first breath of freedom. He had evidently become disgusted with the supervision, suspicion, and despotic control under which he constantly existed in Russia and even in Prussia, and determined to seek a home under freer and more congenial skies. He accordingly sailed for this country and arrived, after a voyage of over 3 weeks, at Boston, and thence came to Washington, thinking that the Capital City of the Nation was the most suitable place for an ambitious young surgeon to commence his career. Here he arrived in the autumn of 1840 in the midst of the excitement of the presidential election which culminated in the election of Harrison and Tyler. Within 2 or 3 months after his arrival he had performed successfully operations for strabismus, club foot and cataract, which at once brought him into notice and secured him a lucrative practice.

The operation for strabismus by ocular myotomy was first introduced into actual practice by Dr. Diefenbach of Vienna, who also had his own methods of operation for club foot. These Dr. Liebermann had the good fortune to learn under his immediate tutorship, and one of the operations, that for strabismus, he performed in this City only a week or 2 after the first operation was performed in this country by a young surgeon in Boston who had been a classmate of Liebermann and who had arrived in this country about the same time.

Dr. Lieberman continued to practice his profession in the City of Washington, D.C., until he retired in 1872. He died on March 29, 1886 and was deeply mourned by members of his profession and the community at large. The large treasure of knowledge and unusual experience in his chosen field which he brought with him from the Old World he generously contributed to his adopted country and to his freely chosen city of residence. He brought with him a great love for truth, justice, political freedom and social service, qualities which he acquired in his native land during his uneven struggle against political despotism, oppression and injustice—a struggle in which he was involved with youthful enthusiasm since his early life. His ideas and ideals found ample opportunity in America and were reflected in his devotion to his new homeland and in the intensity of his cultural community activities. Many of his contributions are continuing to benefit the community in which he lived and elsewhere to the present day.

Georgetown University School of Medicine

Dr. Liebermann was not satisfied with the professional and financial success of his practice and his prestige as a physician which was growing in the community. He was always ready to give of himself freely to the development of such educational and social institutions where his knowledge and experience could be of value. One important instance was his assistance in the founding of the Medical Department of the Georgetown University. Dr. Thomas C. Smith stated in his report to the Medical Society of the District of Columbia, February 16, 1894[5]:

> "It is probable that to Dr. Charles H. Liebermann's influence is due the impetus which brought about the conference which resulted in the development of the plan of organization of the Medical College. This able physician graduated in Germany, where the best facilities existed for acquiring and teaching medical knowledge. On the authority of Diefenbach, as well as his own statement, we learned that Dr. Liebermann was the first surgeon in America to perform the operation for the cure of squint (strabismus). He did not tire of speaking concerning the German methods of teaching medicine and finally aroused an enthusiasm which proved contagious. The proposition to organize under the Charter of the Georgetown College was opposed by some, who were afraid that it would inure to the benefit of Catholic teaching and practice, but this bugaboo was successfully combated."

Finally, Drs. Noble Young, Johnson Eliot, Flodoardo Howard, and Charles H. Liebermann met in the office of Dr. Noble Young on the 25th day of October, 1849, "for the purpose of taking into serious consideration the establishment of a Medical College in the District of Columbia," and after deliberation adopted the following: *Resolved*, that we will establish a Medical College in the District of Columbia.

By invitation, these gentlemen called on Dr. Ryder, President of the Georgetown College, and at that visit it was arranged that the Medical Department should be established and that the above-named gentlemen should be appointed professors thereof. Dr. Liebermann was appointed Professor of the Principles and Practice of Surgery, a position in which he served for many years.

Children's Hospital and Other Activities

The Children's Hospital of the District of Columbia was incorporated on December 2,

1870. Its Charter provides for "the gratuitous medical and surgical treatment of indigent children, without distinction of race, sex or creed"; also that "no person connected with the Hospital, except the matron, nurses and servants, shall receive any compensation for their services." Dr. Liebermann was one of its incorporators, together with other noted Washington physicians (Drs. Busey and Johnston) and was elected to serve on its Board of Directors for 5 years and was reëlected for 5 years more. During that period he was a member of the Consulting Medical Board, Committees on Legislation, Disbursements, and others. By the testimony of his contemporaries he was very devoted to the purposes and activities of the Hospital. Upon his death he left "all medical and surgical instruments and books to the Children's Hospital."

During that period he was also a Consulting Surgeon to Providence Hospital, a Consulting Physician to the Georgetown College and Convent, and Physician to the Convent of Visitation. He was an active member of the first Pathological Society of Washington, organized in 1841, and read a number of scientific papers at its sessions. He had a special interest, as a member, in the Columbian Institute for the Promotion of Arts and Sciences. That was a semi-public institution which preceded the establishment of the Smithsonian Institution and had among its members the various Presidents of the United States of the period, Senators, and Supreme Court Justices, as well as scientists, artists and authors. It had a Department of Medicine and Pharmacology.

President of D. C. Medical Society

Dr. Liebermann was received as a member of the Medical Society of the District of Columbia in 1843; at the same time he also joined the then existing Medical Association of the District of Columbia. The minutes of both Associations show Dr. Liebermann's attendance at most of their sessions until his retirement from practice. He took a most active part in the discussions pertaining to professional and public affairs. At various times he was the chairman of important committees, including that of Examiners, By-laws, etc. He was also elected many times as delegate to the conventions of the American Medical Association (which he joined in 1858). In 1865 he was elected President of the Medical Society of D. C. and was reëlected to that office for 2 successive years.

Harassment and Vindication

Liebermann's path to success in his profession, however, was not always smooth. Very early, after he came to Washington, possibly because of professional jealousy or prejudice against his foreign birth, or because of the then prevailing prejudice against foreigners generally, there developed opposition to him in the profession. The story of this campaign and its outcome is best told by Dr. Busey[6] in his "Personal Reminiscences":

> "Of the many causes of the prevailing discontent and irritation, perhaps not one occasion caused so much recrimination as the statement made and reiterated in derogation of the professional character and standing of Dr. C. H. Liebermann, sometimes so far transgressing the limits of propriety as to charge that he was not a graduate in medicine and did not possess the legal qualifications to practice any branch of his profession. Liebermann himself did not seem to be disturbed by these assaults, and would only occasionally refer to them in a very desultory manner.
>
> "After the organization of the Medical Department of the Georgetown College, of which he was Professor of Surgery, the contention assumed a much more serious aspect. The President of the Medical Faculty took the matter up and very speedily brought it to the attention of the Association by having referred to the Standing Committee a mass of documentary evidence to establish the scientific attainments and moral character of Dr. Liebermann.[7] After a thorough examination, the Committee, June 23, 1852, reported that among the papers and certificates there were found a certificate of matriculation of the University of Berlin, a diploma of the same in proper form, confirming the degree of Doctor of Medicine and Surgery, and numerous other papers and certificates from different professors attesting his proficiency in his studies, his good moral character and high standing, all highly creditable, and satisfying the Committee that he had in every particular conformed to the usage and fulfilled all the requirements demanded by said University to entitle him to the degree of M.D., and to practice medicine, surgery and midwifery. The trumph of Liebermann and his friends was so overwhelming that his enemies skulked under cover of chagrin and mortification to carp in seclusion and silence. . . ."

In connection with this case it is interesting to note the laxity of manner by which persons were admitted to practice medicine at that time. Certainly, the above charges could not have been raised if the documents of Dr. Liebermann had been called for by proper authorities, if such existed, at the time the license to practice medicine was issued. Answering the charges filed against him, Dr. Liebermann presented to the Medical Association a most interesting statement containing autobiographical data and setting out in detail various courses of study at the University of Berlin, School of Medicine, attaching all the original diplomas received by him as well as documents issued to him by the City of Riga, all properly translated. These present a most interesting picture, which may be of historic interest to the physician and layman alike, of the curriculum and professorate of the famous University of Berlin's Medical School in the early part of the 19th century. It is particularly interesting to read his description of the curious manner in which he became involved in the practice of medicine in Washington:

"I arrived in Boston in the fall of 1840, and a few weeks after, when passing through Washington, . . .I was detained by sickness for a short time, and upon the suggestion of a friend, Colonel Klinkewitz, an announcement was made in the *Intelligencer*, the content of which I was then entirely ignorant, not being able to understand a word of English. A few days after that a pamphlet was sent to me through the mail which was translated to me as the Constitution of the Medical Society of the District. The Pole who then resided with me as a translator and who, I soon found, did not understand more English than myself, had the order to show my papers to anyone who might call. The visiting cards of Drs. Sewell, Cansin, May and Hall I found at my office; Drs. Lindsly and Worthington I went to see myself; to each of the latter I handed a $5 piece as requested, and to my knowledge none of them asked for my papers, nor has any of them examined me. Some 2 years after that Dr. Howard brought me the license, signed by Drs. May, Worthington, Lindsly and Thomas, which had remained all that time with Dr. Worthington, I having no idea of being honored with such an instrument. I have since my arrival, and which course I intend to pursue in the future, attended to my own business and let others alone; if others trouble themselves about me, they have certainly missed their aim and done me good where their intention was to harm. I, for myself, have no complaint against anybody in or out of the profession, having always regarded it as maxim that slander is the revenge of a coward."

Dr. Liebermann was married in 1841 to a Miss Betzold of Alexandria, by whom he had 2 children, a son and a daughter. Only his son Charles survived him. His daughter, who married William N. Roach, died, leaving 4 children, whom the doctor took and cared for most tenderly. After his daughter's death, the doctor, to secure quiet and to recover from the shock it caused him, bought a handsome house with large grounds in Annapolis, Md., where he took his grandchildren and lived until 1884, when he returned to his own house on 12th Street.

Personal Characteristics

The colleagues and friends of Dr. Liebermann were apparently impressed with the character, personality, and moral and professional behavior of Dr. Liebermann. Much emphasis was placed on that phase by the speakers appearing at the memorial session of the Medical Society of the District of Columbia, March 29, 1886 and fully recorded in the minutes of the Society.

Dr. J. M. Toner: "In stature he was rather below the average height; he wore glasses. His weight was not much over 125 pounds. While he was of delicate constitution, his life was so regular and prudent that he was enabled to perform a great deal of labor. His memory for details was rarely equaled. He had an orderly and logical method of reasoning, and pertinacious in getting direct answers to his questions put at patients, or to persons on matters of business. A close investor, he possessed wonderful judgment in business and consequently accumulated means. He lived well, but not extravagantly, entertained his friends at the table, and at times told an anecdote in a quiet and inimitable manner. Washington had few physicians of more eminence."

Dr. A. F. A. King: "If ever there was a character without the slightest taint of hypocrisy and humbug, it was the character of Dr. Liebermann. . . . Possessed of a well trained, logical mind and a more than ordinary native intellect, he was not a man to be imposed upon, or to be misled by first impressions. And this ingredient of his intellectual composition led him to properly weigh the testimony obtained by questioning his patients, and by which he so often reached a correct diagnosis when others of his professional brethren had failed to do so. As a diagnostician, whether of medical or surgical cases, I do not think his superior could be found in the profession of this city nor perhaps of some other cities."

Dr. J. W. H. Lovejoy: "In his relations with his medical brethren he was scrupulous in observing the ethics of professional intercourse. He was morbidly averse to notoriety, and always avoided and discouraged any effort to bring him or his actions into publicity."

Dr. Louis Mackall: "He was blunt in manner and speech and not given to the manifestation of much feeling, but he possessed a kind and loving heart; his friendship was strong and lasting."

The resolution passed at the above session included the following paragraph:

"Resolved, that by his death, in the fullness of years, but with the power of his intellect undiminished, and the lustre of his genius undimmed, this Society has lost a valuable member, and the community an honorable, intelligent and useful citizen; the Medical Profession, an honored member; and Medical Science, an able exponent as a teacher of its principles."

He was buried in Rock Creek Cemetery in the City of Washington, where a massive granite monument marks his grave.

The story of Dr. Charles H. Liebermann has many implications. It brings into focus the foreign-born men and women from every corner of the world, and, especially, from the European continent, East and West, who have through the decades helped fashion the cultural and social life of America. Many distinguished scientists, artists and writers left their native lands with their despotic and oppressive régimes and came here seeking a new life and creativity in a climate of individual freedom and opportunity. The medical sciences, especially, have benefited from such emigration, and Dr. Liebermann is a case in point.

There have always been in this country individuals and groups who, through misguided patriotism and jealousy, have put obstacles to the entrance of such refugees, and to their freedom of movement here, but such narrow-minded groups were always in a small minority and never prevailed. Notwithstanding the differences in backgrounds, political climates and social mores existing in America and the various European countries, such immigrants generally found here a hospitable climate, recognition, and wide opportunities to continue their work in their chosen fields and to make their contributions to the ultimate benefit of America and humanity.

Appreciation for assistance in preparing this article is hereby expressed to: The Medical Society of the District of Columbia, Dr. Paul R. Wilner, President, and Maureen Watkins; Helen R. Purtle of the Medical Museum of the A.F.I.P.; Catherine E. Kenny, Librarian, Georgetown University Medical and Dental Schools; Nannette Milstead, of the Children's Hospital of D.C.; and Mrs. Daniel N. Smith, Rockville, Md. (granddaughter of Dr. Charles H. Liebermann).

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Indication—Oral contraception.

Contraindications—Thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, undiagnosed abnormal genital bleeding.

Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	*Mortality Rates*		*Hospitalization Rates (Morbidity)*
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect on the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching. The following laboratory results may be altered by oral contraceptives hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values, metyrapone test pregnanediol determination

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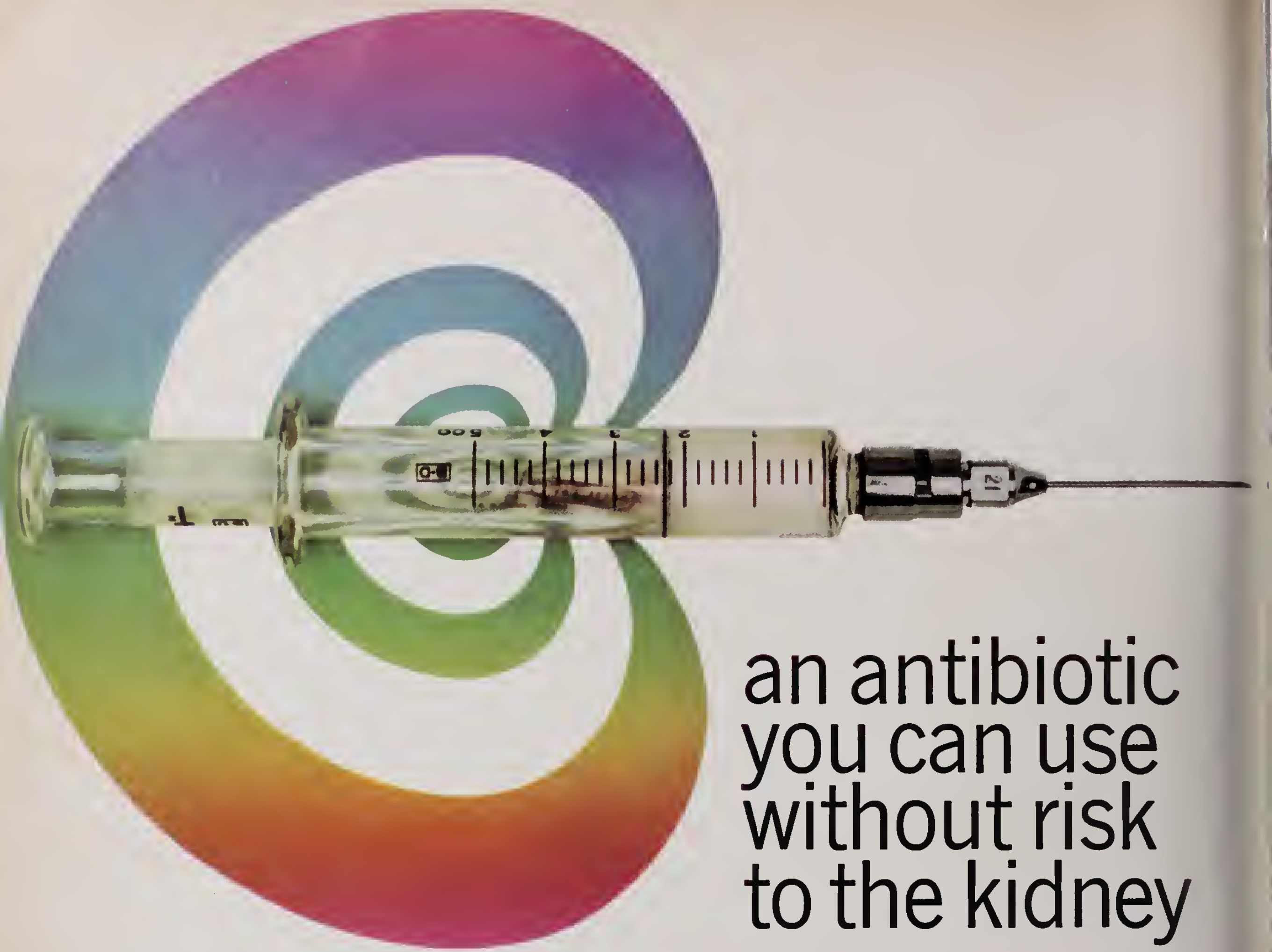

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President's Page

SUGGESTED PLANS FOR INCREASED EFFICIENCY OF HEALTH CARE

THERE IS A SHORTAGE of health-care manpower and medical facilities. With the rapidly increasing demand for health care, the rapidly increasing population, and the inevitable delay in increasing the number of physicians, the shortage of doctors of medicine will continue at least for the next 10 or 20 years. Health services can be increased some by training more aides, but more efficient use of physicians and facilities must be accomplished. The development of better hospital centers for intensive and specialized health care, supported by hospitals for general care, all coupled with facilities for extended, convalescent, nursing and domiciliary care, is required.

In the District of Columbia there are 3 medical schools with hospitals. These should be developed as centers for intensive care, research, teaching of undergraduates, and training residents in advanced and highly specialized fields. These centers should develop affiliated teaching hospitals, general care hospitals with long extended care, and convalescent nursing and domiciliary facilities as subsidiaries. For most efficient development of this system the surrounding county institutions should be incorporated.

To give high quality, round-the-clock medical care to all there must be a better distribution of recent medical school graduates for intern training. The medical school centers should retain and train all undergraduates, with the elective work only to be done in other hospitals. First-year graduates (interns) should be assigned to hospitals other than those at the medical school centers. First-, second- and third-year residents should be assigned where they are needed as well as where they can get the best training for their selected types of practice.

Physicians in practice should be working where they are best able to render the most efficient service. Those primarily interested in teaching, research, and highly specialized fields should be at the medical school centers. Those primarily interested in patient care should be doing their work where they are most needed. Physicians should be limited to privileges at only one hospital. This would markedly increase efficiency by concentrating attending staff work to one hospital and would eliminate the great amount of time wasted in traveling to many different hospitals each day.

This better utilization of interns to help work up patients in hospitals and more efficient use of physicians by limiting their place of work to one hospital would leave more doctors to care for patients through their offices. In fact, it might be possible to free many doctors to work only outside of hospitals. These doctors would refer all patients needing hospital care to attending physicians where work is oriented primarily to inpatient care. This would give an incentive for the former group to keep patients out of institutions, thus, by decreasing admissions, cutting the major element in the cost of patient care.

All of this briefly outlined plan has been presented before. Bringing it together, I hope, will stimulate others to offer plans that will primarily increase efficiency of health care without sacrificing the independence of physicians.

Editorials

Present Attitudes Toward Adult Physical Activity Programs

When talking about attitudes toward adult physical activity programs we have to recognize one that persists which has its roots in the past. The old technique for staying in shape is not far afield from the recommendation of Dr. Logan Clendenning, a famous physician of 40 years ago, who deplored the effort to get Americans on their feet and suggested that rest is much more conducive to the maintenance of health than exercise. He said, "If a man is healthy he doesn't need exercise. If he isn't, it won't do him any good. But you say it makes you better able to endure more. More what? More exercise, of course. Well, there you are, in a vicious circle." Those were the days, too, when a famous humorist always tickled his audiences mightily with the claim that he got his exercise acting as pallbearer at the funerals of friends who were always exercising.

In a more serious vein, many people at that time, physicians included, believed exercise was dangerous for those over 40. The heart might be strained and thus damaged and weakened. The adherents of this kind of attitude toward physical activity are immobilized by very human frailties: inertia (won't move unless pushed), lack of self-discipline, dependence on "pill power" rather than on will power. This *homo sedentarius* (the designation of Burrin of Glasgow) takes no cognizance of the accumulating research data, which admittedly have not yet proved but which do tend to prove that exercise has a beneficent effect on cardiopulmonary fitness. Such a man selectively perceives the informational material which fits in with his existing interests, needs, values and habits. If the material doesn't fit, it is ignored, misunderstood, or misinterpreted.

With World War II we began to note the benefits of early ambulation. But as late as a decade ago the physician who ordered his coronary-prone or postinfarction patient to engage in strenuous exercise would cause many eyebrows to be elevated. However, with President Eisenhower's first heart attack, and the emergence of Dr. Paul Dudley White into the lay public's cognizance, the advocacy of physical activity as a medical modality gained momentum. Now scores of investigators corroborate the moral conviction that the benefits of regular systematic exercise do hold true for all age groups. And the data from their experiments are gradually transforming that moral conviction into a scientific conclusion. Even now it is quite widely accepted that physical activity is essential to the maintenance of cardiorespiratory fitness. This attitude is 180 degrees from the first one, and its adherents are multiplying.

Among the most important stimulants to improved attitudes in the community toward physical activity programs have been the attitude and actions of physicians. Physicians need not be bashful, for Hippocrates 2,000 years ago called exercise man's best medicine. He also promulgated the law of use: "That which is used develops; that which is not used wastes away." The body thus seems to be the one machine that breaks down when it is not used; it is the one machine that works better the more you use it. Fortunately, physicians are showing an interest. Last evening I attended a banquet and awards ceremony sponsored by the Junior Chamber of Commerce and the Metropolitan Life Insurance Company. Twelve workers in the physical fitness field had been chosen from among many nominees across the country to receive special awards for their contributions toward physical fitness. Six of the 12 were physicians, and 2 out of 3 $1,000 prize-winners were physicians.

So physicians are taking the lead in many places and are using exercise as a treatment in their care of patients to bridge that gap between mere freedom from disease and a buoyant feeling of well-being. They no longer have a vested interest in seeking out the occasional ill effects of overenthusiastic exertion. But, as a group, they

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* Summary of presentation at the Physical Fitness Seminar sponsored by the Medical Society of the District of Columbia in Washington, D. C., April 23, 1969.

Opinion expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

need additional instruction and information on the subject. For example, when they prescribe exercise for their patients and their patients ask how long, how much, how strenuously and what kind, most physicians tend to give vague, nonspecific prescriptions: "Just exercise a bit," or "Take some moderate exercise." University medical schools and medical societies should provide practicing physicians with simple, practical outlines of physical exercise and recreation, graded according to various levels of fitness. One thing is certain. Leadership, both professional and lay, is necessary to initiate and carry through programs of physical activity in any community. At no level can government or any outside agency introduce effective programs without the full coöperation of the local community.

I should like to discuss motivation for a moment. Motivation is a field in which scientific measurement is difficult. The question of community motivation was examined by Stiles of Spokane, with the result that multiple motivating factors were found to be the rule. Fear of incapacitation, the desire for vibrant health, and competitive drive were usually found to be present initially. For continuation in physical activity and sports other factors play a part, e.g., the thrill of participation, the feeling of well-being, the satisfaction of mastery, the drive to excel, often in self-competition, congenial companionship with like-minded individuals, the attainment of a desired self-image, the maintenance of youthful vigor, escape from crowds, and various social pressures from family or neighbors. All these were found to operate toward keeping people engaged. The thought that they were helping medical research was also a factor which kept people motivated. It is reasonable to say that the time has come for the medical profession to capitalize on the interest that is being aroused and to set a good example. The effect of such example diffuses throughout the social structure and leads to other healthful actions, like controlling weight and stopping smoking. It causes a positive, as opposed to a fatalistic, approach to health maintenance and longevity. Physical health education should be extended beyond the college years. It should become a part of all preventive medicine programs.

When individual difficulties are encountered, such as painful ankles, knees and sore feet, their negative influence on motivation can be considerable. But they do not deter so markedly when people see others having the same problems and when local medical monitors give reinforcement and encouragement.

In concluding this very brief review of attitudes, as they influence adult participation in exercise, I cannot do better than to refer to Fox and Haskell: "During scientific evaluation, new regimens for living or for preventing and treating disease tend to pass through 3 phases: the promising, the prudent, and the proved. The value of physical activity has been accepted by many as promising and prudent." I should like to add that it is already well on the road to being proved and to being so recognized.

Lt. General Richard L. Bohannon,
USAF, MC (Ret.)
President, National Jogging Association

The Story of Dr. Liebermann and the Uses of Medical History

"Yes, but is it *relevant*?" is the strident cry heard on all sides these days from students, activists and dissidents. It is something of a relief, then, to find in this issue (p. 499) a delightful piece of medical history whose relevance, although quite real, is subtle rather than blatant. Readers of the Annals have a treat in store if they turn to the fascinating story of Dr. Charles H. Liebermann, a remarkable but hitherto obscure figure who was President of our Society in 1865 and distinguished himself in Washington medical circles by his many accomplishments.

The story, skillfully told by Samuel Holland, reads like an adventure story. Even more important is its ability to catch the flavor of Washington medicine of the mid-19th century. At that time the contributions of European-trained physicians to American medicine were greatly appreciated in some quarters but deeply resented in others. Xenophobia, even in medical circles, was prevalent in Liebermann's day, and he became, for a while, the innocent victim of harassment by his colleagues. It is inspiring to learn how he coped with this problem and triumphed in the end. The reader will be shocked, as was I, to learn of the laxity of medical licensure in those days and will smile indulgently at the great progress we have made in this regard. But when we read of the professional jealousies and biases which occasionally threatened some of Liebermann's medical

"Drug Abuse: The Chemical Cop-Out"

This pamphlet, published by the National Association of Blue Shield Plans, is designed to provide basic information in lay language on dangerous drugs and narcotics. It explains many of the physical and psychological effects of certain drugs and explores some of the sociological background of drug abuse. Dr. Seymour Alpert, Chairman of the Medical Society's Interdisciplinary Committee on Drug Dependency, strongly recommends that physicians secure "Drug Abuse" for their own information in order to better answer questions put to them by patients young and old. Copies of this excellent publication, illustrated in color, are also intended for doctors to give interested patients and may be obtained free from the local Blue Shield office, Medical Service of D. C., 550 12th Street, S.W., Washington, D. C. 20024; telephone: 484-9200.

projects, we realize that human nature has shown very little change.

An interest in medical history serves to give perspective and a welcome change of pace to the practicing physician. Washington, with its many libraries and museums, is a literal mecca for the medical history buff. If further stimulation is desired, the excellent quarterly meetings of the Washington Society for the History of Medicine provide a lively forum which is open to all interested members. It is hoped that this paper on Dr. Liebermann will spur further interest in the history of our professional heritage.

Z. M. L.

Conference on Surface Analysis

Pediatricians, pathologists, general practitioners, allergists and laboratory technicians as well as lawyers, chemists, physicists, museum conservators, crime laboratory experts, and other interested persons are invited to attend the first Georgetown Conference on Surface Analysis—toward broad intercommunication among the sciences. It is to be held, October 9 and 10, at the Marriott Twin Bridges Motor Inn, sponsored by Georgetown University Law Center's Institute of Criminal Law and Procedure, under the aegis of the Forensic Sciences Laboratory of the Institute.

Useful advanced technology and its possible relationship to a wide range of applications will be discussed in lay language throughout the meeting.

On the program are noted authorities in widely separated fields, such as Dean John C. Rose, of Georgetown University School of Medicine; Dean Adrian S. Fisher, of the Georgetown University Law Center; Mr. Paul A. Wilks, President of Wilks Scientific, Inc.; Dr. A. J. Tousimis, Scientific Director of Biodynamics Laboratories; Dr. I. Adler, of NASA-Goddard Space Flight Center; and others in the physical sciences, medicine, the law and crime laboratory fields.

The Conference is an effort to enable professional people in unrelated fields to help one another. The disciplines represented appear to have special relevancy to one another so far as connecting methods with problems across the voids which tend to exist between some of these fields of effort.

Co-sponsors of the conference are the American Society for Testing and Materials and the American Bar Association, Section of Criminal Law. Federal matching funds are being provided by the Department of Commerce, Office of State Technical Services, through the Consortium of Universities of the District of Columbia.

Before October 1 the preregistration fee is $35.00 and will include 2 luncheons and a copy of the proceedings. October 1 and after, the registration fee will be $45.00. The proceedings alone will cost $15.00.

Director of the Conference is Mr. Joseph M. English. Application with registration fee should be mailed to him at 4380 MacArthur Blvd., N.W., Washington, D. C. 20007; telephone 338-9565.

CORRESPONDENCE

Chicago, Illinois, July 28, 1969

To President Bacon:

Please express my sincere thanks to the members of the Medical Society of the District of Columbia for your message of congratulation on my eightieth birthday. You were good to remember me on this occasion. The members of the Society, and particularly my dear friend, Ted Wiprud, have done much to contribute to anything that I may have accomplished in the medical field.

Morris Fishbein, M.D.

HEALTH DEPARTMENT NOTES

Help for the Handicapped

The Crippled Children's Unit at D. C. General Hospital, with its increased size and multidisciplinary services for both inpatients and outpatients, would scarcely be recognized by those responsible for creating the service some 30 years ago.

Originally established as an outpatient clinic for the treatment and diagnosis of children with orthopedic problems and later expanded to care for both inpatients and outpatients, the range of services, while still mainly orthopedic, now includes treatment for such other handicapping and potentially crippling conditions as neurological problems, congenital heart disease, rheumatic fever, cerebral palsy, epilepsy, cleft lip, cleft palate and other dentofacial handicaps, communications disorders, speech, hearing and visual defects, allergies, and mental retardation.

Approximately three-fourths of the patient visits to the Crippled Children's Unit are for treatment of orthopedic problems. Many of these are amputees who are treated in the Juvenile Amputee Clinic, which has a regional designation because, in addition to District residents, patients from Maryland and Virginia may be referred there. Headed by an orthopedist, the staff includes occupational and physical therapists, psychologists, clinical social workers, and prosthetists. Prostheses are custom-made and fitted by prosthetists assigned to the Crippled Children's Unit.

Ophthalmological patients constitute the second largest group treated in the Unit. Not intended for routine testing and fitting of glasses, the eye clinic is designed to serve children with long-term eye problems. Cataracts and strabismus are among the conditions for which surgical procedures are scheduled frequently. An orthoptic technician in the eye clinic may be assigned to cases where eye exercises tailored to the needs of the individual patient may eliminate the need for surgery.

An example of the multidisciplinary interaction in the Crippled Children's Unit might be the treatment of a cerebral palsied child. Since cerebral palsy may be accompanied by other anomalies, such as eye pathology, seizure and learning defects, consultants are available in ophthalmology, neurology, psychology and other disciplines. Findings of the specialists in those areas are correlated by the pediatrician into a realistic plan for management on a long-term basis, including long-term educational recommendations.

Cerebral palsy patients and mentally retarded children are treated under general anesthesia by the Unit's dental clinic staff, since prophylaxis and fillings often cannot be suitably performed in the usual dental office setting. Dental surgery in the Unit also may include procedures dealing with dental dysplasia (hereditary enamel disorder) and with the malocclusions typical of cleft-palate patients. Orthodontic treatment is available on a limited basis for these difficult problems.

The Crippled Children's Unit also finds itself treating 3 or 4 young people, usually teenagers, each year for osteogenic sarcoma. Epileptics may be admitted to the Unit as inpatients for diagnostic procedures and seizure control. Depending on the diagnosis they may be treated by either a pediatrician or neurologist.

The role of the psychologist and social worker in the treatment of handicapped patients is recognized as one of great importance. The handicapped child, a complex individual, more often than not must face a world in which he is obviously different. The adjustment to prostheses by patients who already have reached school age is extremely difficult, because those patients are aware of the loss of a function which affects mobility and participation.

Counseling is not limited to amputees but is included in the treatment of many patients. The family is vitally concerned in the effort to develop as normal a life as possible for the child, and through counseling sessions he is made aware of ways to achieve this goal.

When a child is brought to the Crippled Children's Unit after referral from a private physician or from a clinic, the course of treatment is designed to eliminate the problem, if possible, or to stabilize the condition, if no alternative presents itself. Through the multidisciplinary involvement, both patient and family, in most cases, learn to accept and live within the limitations imposed by the handicap.

Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

The Apprehensive Hypertensive

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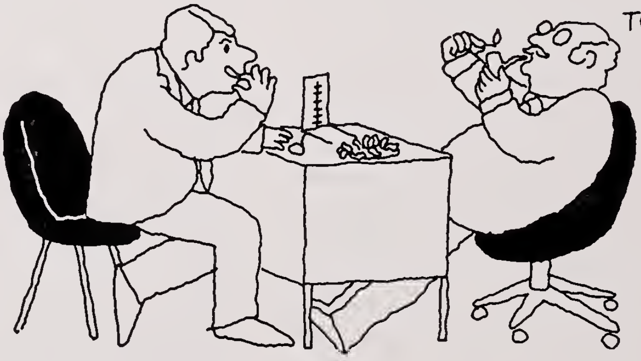
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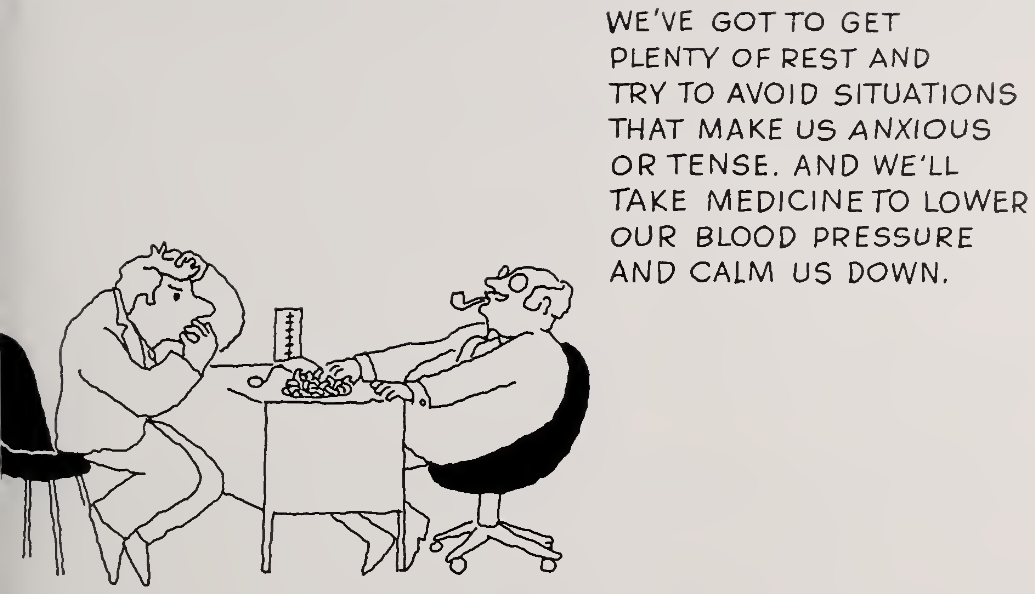

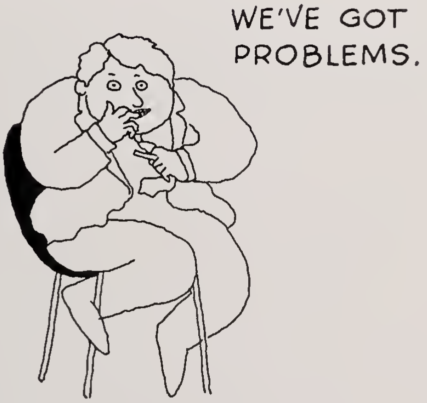

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osteroids, ACTH, or digitalis. Severe salt restriction is not recom-
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Report of the Chairman of the Board of Trustees of Medical Service*

On the occasion of this meeting I shall complete 10 years of service on the Board of Trustees of Medical Service of D. C. During that decade entirely new concepts in Government financing medical care have evolved, such as Medicare and the Government-wide Service Benefit Plan for Federal Employees. These programs, which have brought Government money and authority into the payment process, have affected the lives and work of all of us.

During the past year the Board has concentrated its attention on 3 local problem areas related to Government financing of medical care which may briefly be described as follows: (1) the need to conform to criteria prescribed by the Social Security Administration for determining reasonable charges under Medicare; (2) the need to conform to the Membership Standard of the National Association of Blue Shield Plans with respect to the availability of a paid-in-full program; (3) the adoption of increased income levels and the D. C. Medical Society's Relative Value Scale with increased conversion factors for all Medical Service contracts and programs, including the Federal Employee Program. During the past year we have had considerable negotiation with the Social Security Administration and the National Association of Blue Shield Plans. The former is endeavoring to enforce the laws and regulations pertaining to Medicare. The National Association is making new rules and is anxious to enforce them. The Social Security Administration is, of course, dominated by nonmedical personnel. If you are required to follow the rules of the National Association, you must have strong physician representation at the national level.

At this time I shall review some of the history of our problem areas and the present status of Medical Service in relation to them.

Medicare

Under the Medicare Law the Secretary of Health, Education, and Welfare is authorized to enter into contracts with carriers to carry out the provisions of the law with respect to payment of reasonable charges for physicians' services and to assist in the application of safeguards against unnecessary utilization of services. While the Secretary may automatically renew carrier contracts on an annual basis, the performance of Medical Service with respect to determining reasonable charges and exercising utilization review and control was questioned by the Social Security Administration, and the contract was renewed for a 6-month period during which it is expected that Medical Service will demonstrate its willingness and ability to conform to those provisions of the law which apply to the determination of reasonable charges and utilization review.

Medicare requires that the physician's charge to a Medicare beneficiary shall not exceed his usual charge for the service performed, and Medical Service undertook to satisfy this requirement by use of a certification that the physician's charge did not exceed his usual charge. The Social Security Administration took the position that a certification of usual charges by a physician does not constitute an adequate application of the customary charge criteria, and it became necessary to develop physician profiles to identify individual physician's charges as required by Social Security Administration regulations.

Medicare also requires that carriers establish and maintain adequate utilization review procedures and controls. In order to conform to the Medicare requirements concerning utilization review and control, a computerized utilization review system is now under development. In the interim we have approved a program of manually analyzing paid claim data which will screen out questionable cases and claims which require further analysis. It is understood, of course, that certain questionable cases will be submitted to medical society review committees upon request of the physician or the beneficiary.

While it is recognized that some of the controls required by Medicare are distasteful to many physicians, it is the conclusion of your Board that it will be better for Medical Service to administer this program and the controls which apply to it than to abandon Medicare to another agency serving the Government. We have, therefore, taken steps to conform to the requirements imposed upon us for determining reasonable charges and establishing procedures for utilization review and control.

NABSP Paid-in-full Membership Standard

In October of last year the Membership Standards of the National Association of Blue Shield Plans were amended to provide that "each active Member Plan shall make available a paid-in-full

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* Presented at the Annual Meeting of Participating Physicians of Medical Service of the District of Columbia, May 28, 1969.

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program, based upon the usual, customary and reasonable charges of physicians and which takes into consideration the patterns of charges for similar services provided under comparable circumstances in the same geographic area." This Membership Standard further provides that "such program shall show evidence of professional support; shall contain provision for the development and maintenance of individual physician's charge patterns; and shall have regular professional review and analysis consistent with Plan responsibility to both physicians and the general public."

It must be pointed out that Participating Physicians have raised objections to the adoption of a large scale paid-in-full program by Medical Service, and Medical Service does not meet the National Association's Membership Standard in this respect. However, our membership in the National Association has been renewed, and we do not expect that any action will be taken during the coming year to alter our status as a member in good standing of the National Association of Blue Shield Plans. It is understood by both the National Association and your Board of Trustees that continuing efforts need to be made to develop and make available a paid-in-full program which will be acceptable to most Participating Physicians and meet the Membership Standards of our National Association. At the recent meeting of the National Association the Board agreed to continue our full membership for the present. The benefits of membership are not unilateral. I think our membership is as important to the National Association as to our Plan. Our membership is especially important since the Federal Employee Program is negotiated on a national level and half our program involves Federal employees.

We believe we can make available a paid-in-full program which will provide payment of usual and customary charges without deductible and coinsurance amounts to be paid by the patient, which will provide for periodic updating based upon changes in charges as they occur, and which will allow for peer review of disputed cases.

Implementation of New Income Levels and D. C. Medical Society's Relative Value Scale

During the past several months your Board of Trustees has directed its attention to implementation of the Board's proposal to increase income levels and adopt the D. C. Medical Society's Relative Value Scale as the basis for determining payment to be made to physicians under both the Federal Employee Program and local non-Federal employee programs.

It is a pleasure to announce that the increased income levels and use of the D. C. Medical Society's Relative Value Scale have been approved for the Federal Employee Program, and efforts are being made to implement this portion of the program by August 1, 1969.

Except for laboratory and radiological procedures it is expected that we will begin implementation of the new program for local non-Federal employee business on September 1, 1969, changing subscribers and groups to the new program on a month-to-month basis as rates for each group are changed and new income levels become effective. For laboratory and radiological procedures, the conversion to the D. C. Medical Society's Relative Value Scale with increased conversion factors will apply to all programs August 1, 1969.

It was my hope that the National Association would, in addition to approving the increased income levels and basic fees for the Federal Employee Program, approve our proposal to remove the deductible and coinsurance features from the

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Supplemental portion of the Federal Employee Program. Unfortunately, this was not to be, and the Federal employee is still denied the maximum coverage which we proposed even though the cost of that coverage would be supported by increased subscription rates which he is now paying.

However, we are pleased that we shall be able to implement the new program for the entire Federal employee segment of our subscription enrollment on August 1, and we look forward to completion of the transition from the old to the new program for non-Federal employees during the 12-month period beginning September 1, 1969.

In closing, I want to emphasize that the Board has consistently acted with the interests of the Participating Physician in mind. I believe that we shall be in the enviable position of having available a paid-in-full program that will take fully into account the interests of physicians who support it and a realistic income level program for those who are unable to afford a paid-in-full program, and that both the public and the physician interests will have been well served. I am proud to have played a part in the development of these programs for financing medical care which have evolved during my years as a member of the Board of Medical Service, and I want to thank you for your help and encouragement. I want to speak especially of the dedication of your members on the Board of Trustees during the past 2 years. There has been very close coöperation between the Chairman and the Vice Chairman, Dr. Jack Kleh, whom I have considered more Co-chairman than Vice Chairman. He has been well prepared for his duties and he has conducted meetings of the Participating Physicians, the Executive Committee of the Board, and the full Board of Trustees. He has represented you in Chicago 3 times during the past year and has appeared before the National Board on 2 occasions. I also highly commend the work of your President, Mr. George B. McGovern. Without his coöperation and diligent efforts the difficult past year would have been unsuccessful.

LEONARD T. PETERSON, M.D.
Chairman, Board of Trustees,
Medical Service of the
District of Columbia

►DOCPAC BRIEFS

or

Freedom Is Law and Order*

I KNOW from personal experience and observation what the medical profession—because of its leadership and respect in the community—can do in politics for the benefit of good government.

There's another little wrinkle here that I might add. Doctors' wives have been of tremendous assistance in campaigns too, mine included—giving informal teas, or coffee klatches, or just plain talking to people. They've been a big help.

You have the opportunity, the machinery; I beg you to use it.

If America is to withstand the influences and trends I have described, there must be a renewal of the spirit of our forefathers; appreciation of the American way of life; strengthening of muscle and sinew and the character of the Nation. America needs guts as well as guns.

Could many of the national wrongs that we suffer today be the result of our failure to train a strong citizenry? Have we grown up to believe in:

politics without principle;
pleasure without conscience;
knowledge without effort;

---

* Excerpts from "Politics Without Doctors Is Bad Medicine" by Senator Paul Fannin, of Arizona, and reprinted by permission from the Journal of the Georgia Medical Association, October 1968.

wealth without work;
business without morality;
science without humanity;
worship without sacrifice . . . ?

In the words of Thomas Paine: "These are the times that try men's souls. The summer soldier and the sunshine patriot will in this crisis shrink from the service of his country; but he that stands it now deserves the love and thanks of men and women. . . . The harder the conflict the more glorious the triumph. What we obtain too cheap, we esteem too lightly. Heaven knows how to put a proper price upon its goods; and it would be strange indeed if so celestial an article as freedom should not be highly rated."

As American citizens who love freedom we must return to a respect for national morality—respect for law and order. There is no other way of safety for us and for our posterity.

The hour is late; the time is short. We must begin now, in earnest, and invite God's blessing on our efforts.

That's what DOCPAC is all about. We need more members and dues (individual, $20, or family, $30) to work with. Send to DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D. C. 20037 or to the Medical Society, 2007 Eye Street, N.W., Washington, D. C. 20006.

William H. Cooper, M.D.
Chairman, D. C. Political Action Committee

Mrs. Osbourn Heads the Auxiliary

The new President of the Woman's Auxiliary to the Medical Society of the District of Columbia, Dorothea E. Osbourn, was recruited from Chillicothe, Ohio, for employment by the Internal Revenue Service in Washington, D. C.

She met and married a native Washingtonian and dermatologist, Raymond A. Osbourn. The Osbourns have 4 children: Raymond V., presently in the Medical Service Corps of the United States Army, stationed at Brooke General Hospital, Fort Sam Houston, Texas; Lisa and Ruth Anne, both college students; and Mary Theresa, a senior at the School of the Holy Child in Potomac, Md. Residents of Chevy Chase, Md., the Osbourns maintain a summer cottage at Neeld Estate Beach in Calvert County, Md., on the Chesapeake Bay.

A member of the Woman's Auxiliary since 1946, Dorothea has been an active participant in Auxiliary affairs for the past 11 years. Other medical organizations commanding her interest are the Women's Board of Providence Hospital, where she served 2 terms as President, from 1963 to 1965, and as delegate to the American Hospital Association Convention in 1961 and 1963; the Ladies Board of Georgetown University Hospital; and the Women's Auxiliary to the Southern Medical Association, holding the office of Treasurer during 1966–67.

MRS. RAYMOND A. OSBOURN
President, Woman's Auxiliary, 1969

Her community services over the years have been varied, ranging from leader of a Girl Scout Troup, Cub Scout Den Mother, Secretary of an elementary school PTA, President of the Auxiliary of the School of the Holy Child, member of the Women's Club of Chevy Chase and the Rock Creek Republican Women's Club of Montgomery County, to Province President of Sigma Phi Gamma, a philanthropic international sorority.

She is also recipient of a citation for aid to the White House Conference on Children and Youth in 1960 and has been listed in "Who's Who of American Women" since 1963.

Her hobbies are bowling, beaching, conversational French, and traveling.

Mrs. Ernest H. Aschenbach
Publicity Chairman

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News & Personals

Summary of Executive Board Actions

Proceedings of July 28 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Thomas M. Arnett, Robert J. Coffey, Henry D. Ecker, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary.

The meeting was called to order by Dr. Wilner at 7:25 p.m.

The minutes of the June 23, 1969 meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

June	24	Committee on Aviation Medicine
	26	Committee on Communicable Diseases
	26	Medical Bureau Committee
July	3	Physician Placement Committee
	3	Traffic Committee
	8	Board of Credentials
	11	Committee on Emergency Medical Services
	15	Grievance Committee
	18	Hospital Utilization Committee
	23	Interdisciplinary Committee on Drug Dependency
	24	Committee on Public Welfare

Board of Credentials: On recommendation of the Board of Credentials, 14 applicants were elected to Active membership and 2 to Associate membership. Their names appear on page 529. Approval was given to the following changes in membership status:

Transfers

Active to Associate: William G. Ballinger, Laszlo Ormandy, Ann S. Peterson, Mitchell W. Spellman, and Ralph R. Stevenson

Active to Resident-Intern: Richard Alan Schwartz

Active to Special: Maurice J. Kossow

Resignations

Associate: William D. Aud, Bartolo Barone, Joseph O. Romness, and Morton Walter Shapiro

Medical Service of D. C.: Dr. Jack Kleh, Chairman of the Board of Medical Service, appeared before the Board to discuss ways to improve communication between Medical Service and the Medical Society. Dr. Kleh stated that, in his opinion, orientation and education of physician participants are imperative for a full understanding of Medical Service and its operation. He presented the views and plans of Medical Service for a paid-in-full program.

Washington Psychiatric Society's Directory: In response to a letter from the Washington Psychiatric Society regarding its Directory, the Board agreed that a directory of psychiatrists is useful but that an endorsement by the Medical Society is not necessary.

Proposed Amendments to D. C. Abortion Law: A motion was made and carried to approve Dr. Bacon's letter of July 28 to Assistant Commissioner Fletcher in regard to the proposed amendments to local abortion laws. Specifically, the Board endorsed the following proposed amendment to D. C. Code Section 22-201:

> "Whoever, by means of any instrument, medicine, drug or other means whatever, procures or produces, or attempts to procure or produce an abortion or miscarriage on any woman, unless done by a licensed physician in consultation with 2 other physicians who concur in writing on the need for the operation: (1) to safeguard the life or physical or mental health of the mother; (2) to prevent the birth of a child likely to suffer grave and permanent physical deformity or mental deficiencies; or (3) to terminate pregnancies resulting from rape or incest where requested, shall be imprisoned in the penitentiary not less than 1 year or not more than 10 years; or if death of the mother results therefrom, the person procuring or producing or attempting to procure or produce the abortion or miscarriage shall be guilty of second degree murder."

Nominees for 1969 Awards: Approval was given to the following suggested recipients for the Society's Annual Awards for 1969:

Certificate for Meritorious Service: Worth B. Daniels, M.D.

Robins Community Service Award: Seymour Alpert, M.D.

John Benjamin Nichols Award to laymen: Mr. William Doores, for his work with the Arthritis and Rheumatism Association of Metropolitan Washington.

Utilization Committee: Dr. Bacon noted developments thus far to establish guidelines for a Utilization Committee. After some discussion it was voted to change the name of the Hospital Utilization Committee to the Utilization Committee.

Other Business

1. Dr. Bacon reported that the Medical Council for Northern Virginia is in the process of developing a Comprehensive Health Planning Council of Northern Virginia.

2. President Bacon also reported that the Health Insurance Association of America had requested our participation in a "Feasibility Study to Determine the Utilization of Health Services under Different Medical Practice Arrangements." The Board voted to approve the Society's participation in the study.

3. Mr. Sadler reminded the Board that any nominations for AMA Councils or Committees should be forwarded no later than August 4. He reported that Dr. William R. Felts had been nominated by Dr. Bacon for the Council on Legislative Activity. The Board had no other nominations to make.

4. As recommended by the Interdisciplinary Council on Drugs, the Board voted to approve the specifics of the D. C. Health Department's Methadone Treatment Program for Drug Addicts.

5. The Board accepted the following recommendations regarding Community Health Week to be observed October 20, 21 and 22: A portable testing unit is to be stationed in front of the building to relieve traffic in the building where a limited series of tests will be given. A doctor will be present at all times.

6. The Board voted to reprimand a member of the Society for failure to communicate with the Chairman of the Grievance Committee.

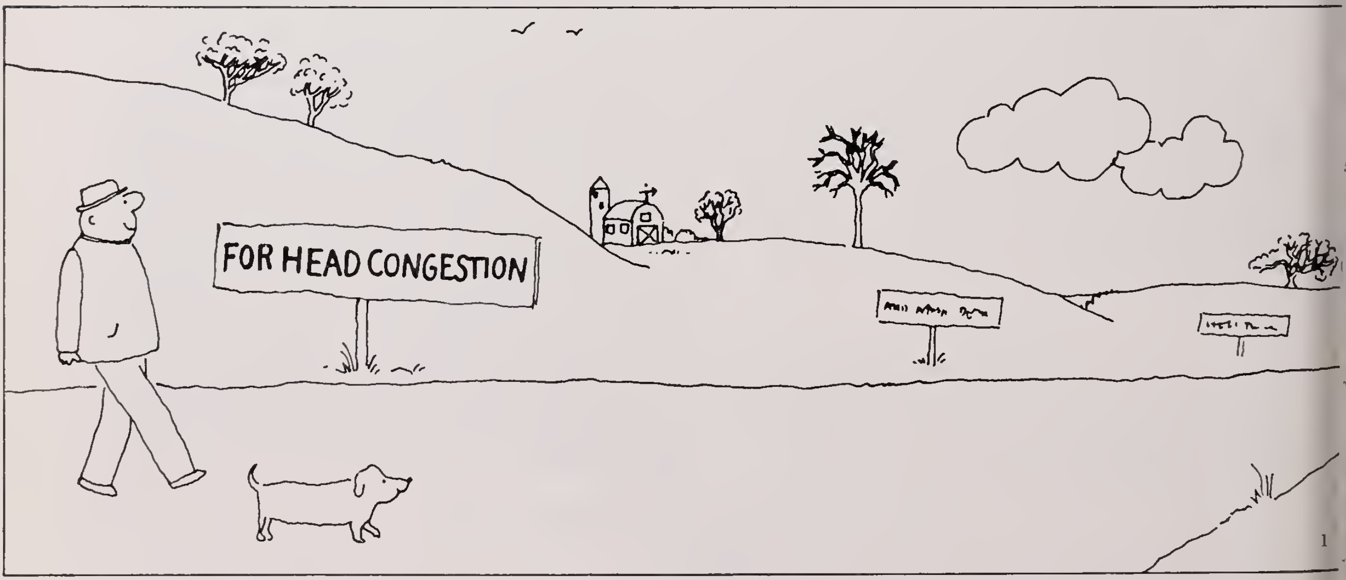
There being no further business, the meeting was adjourned at 10:05 p.m.

MEETINGS

All members are urged to attend the Medical Society's 3-day **Annual Scientific Assembly** at the Mayflower Hotel, September 24, 25 and 26. Preregistration opens in the offices of the Medical Society at 8:30 a.m., September 22. An excellent attendance is anticipated.

Doctors are also urged to view as many of the technical exhibits as possible. These exhibitors not only make the Assembly possible but many of them support the Society's publication.

ADVERTISEMEN



"Scientific Examination of the Graphic Record" is the theme of the first **Georgetown Conference on Surface Analysis** to be held at the Marriott Twin Bridges Motor Inn, U. S. 1, October 9 and 10. The Conference is sponsored by the Georgetown University Law Center's Institute of Criminal Law and Procedure. Co-sponsors are the American Society for Testing and Materials and the American Bar Association. More details concerning the Conference appear on page 512 of this issue. It will be chaired by Mr. Joseph M. English, Director of the Forensic Sciences Laboratory, 4830 MacArthur Blvd., N.W., Washington, D. C. 20007; telephone 338-9565.

Georgetown University Medical Center announces a **Course in Orthopaedic Pathology** to be held at the Marriott Motel, Key Bridge, Rosslyn, D. C., January 4–11, 1970. This 80-hour course, including 30 hours of laboratory direction, will be presented by Dr. Lent C. Johnson of the Armed Forces Institute of Pathology. For further information contact Dr. G. W. Hyatt, 3800 Reservoir Road, N.W., Washington, D. C. 20007.

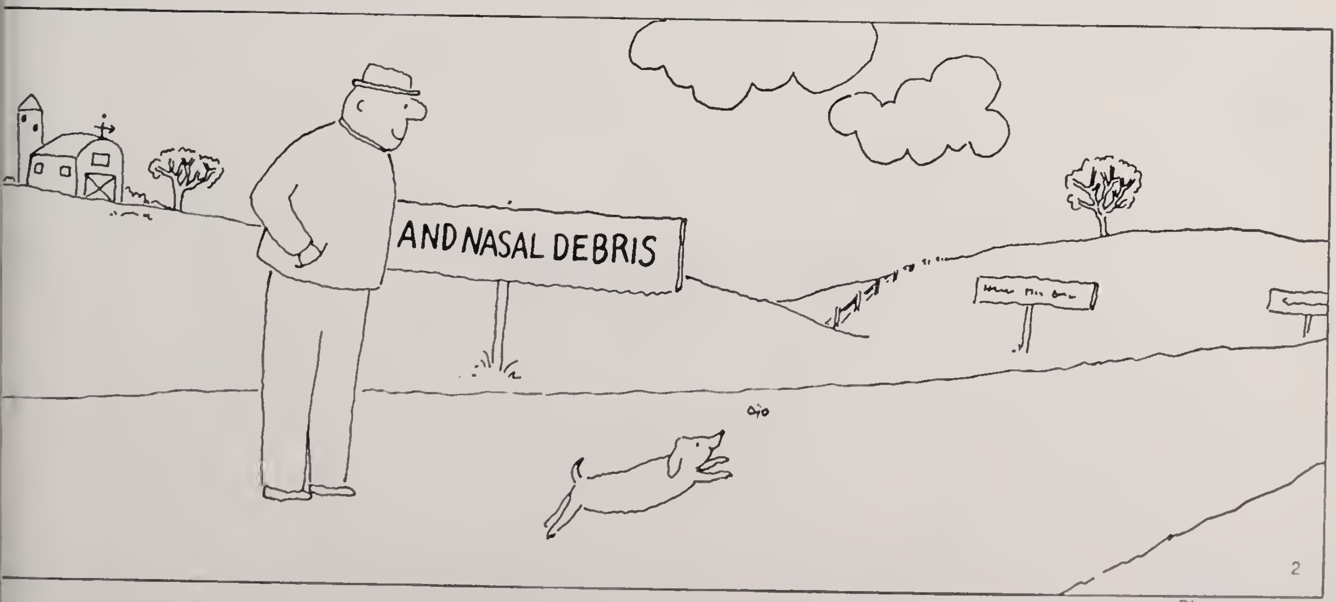
►GENERAL NEWS

On July 11, 1969, the Senate confirmed the President's appointment of **Dr. Roger O. Egeberg,** of Los Angeles, as **Assistant Secretary for Health and Scientific Affairs,** Department of Health, Education, and Welfare. Dr. Egeberg, Dean of the University of Southern California School of Medicine, is a member of the American Medical Association, a Fellow of the American College of Physicians, and has served on many national study groups on health matters.

The Washington Heart Association is accepting applications through October 10 for grants-in-aid for consideration at the November meeting of the Research Committee. The purpose of the 1-year grants is to promote continuing research by local scientists in the cardiovascular field or in basic sciences related to it. The awards for applications will be paid to nonprofit institutions in the District of Columbia in direct support of a particular investigator with a recognized doctorate for a specific program of research under his direction. No portion of the award can be used in personal support of the investigator.

For applications or further information write the Research Director, Washington Heart Association, 2007 Eye Street, N.W., Washington, D. C. 20006, or telephone 296-4697.

The Physicians' Drug Manual (PDM), a monthly cumulative publication in visual chart form to help physicians quickly choose the most therapeutic and least toxic drug for their individual patients, is now in publication. The Executive Editor is Dr. Albert A. LaVerne. The publication will ultimately provide impartial rating and appraisal information on approximately 4,000 prescription drugs under the direction of a panel of prominent physicians, including Dr. James L. Goddard, Commissioner of the FDA



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from 1966 to 1968; Dr. Edward R. Annis, former trustee and President of the AMA; Dr. Nathan S. Kline, Director of Research, Rockland State Hospital, Orangeburg, N. Y.; Dr. Chauncey D. Leake, seminar lecturer in pharmacology, University of California, San Francisco Medical Center; Dr. Howard F. Conn, Editor of Current Therapy; and other leading pharmacologists and physicians from all specialties.

To subscribe for the Manual ($48.50 per year) address Behavioral Neuropsychiatry, 17 East 82nd Street, New York, N. Y. 10028.

On June 21 **"The Distant Drummer"** received the Bronze Medal for medical documentaries in this year's world competition at the Atlanta (Georgia) International Film Festival. Over 800 films from 32 nations had entered the competition.

"The Distant Drummer" series was produced by the George Washington University Medical Center in coöperation with the National Institute of Mental Health, the American Academy of General Practice, and the Medical Society of the District of Columbia. Dr. Murdock Head, Director of the Airlie Foundation, and Dr. Sidney Cohen, Director of the Division of Narcotics and Drug Abuse, National Institute of Mental Health, were executive producer and author, respectively.

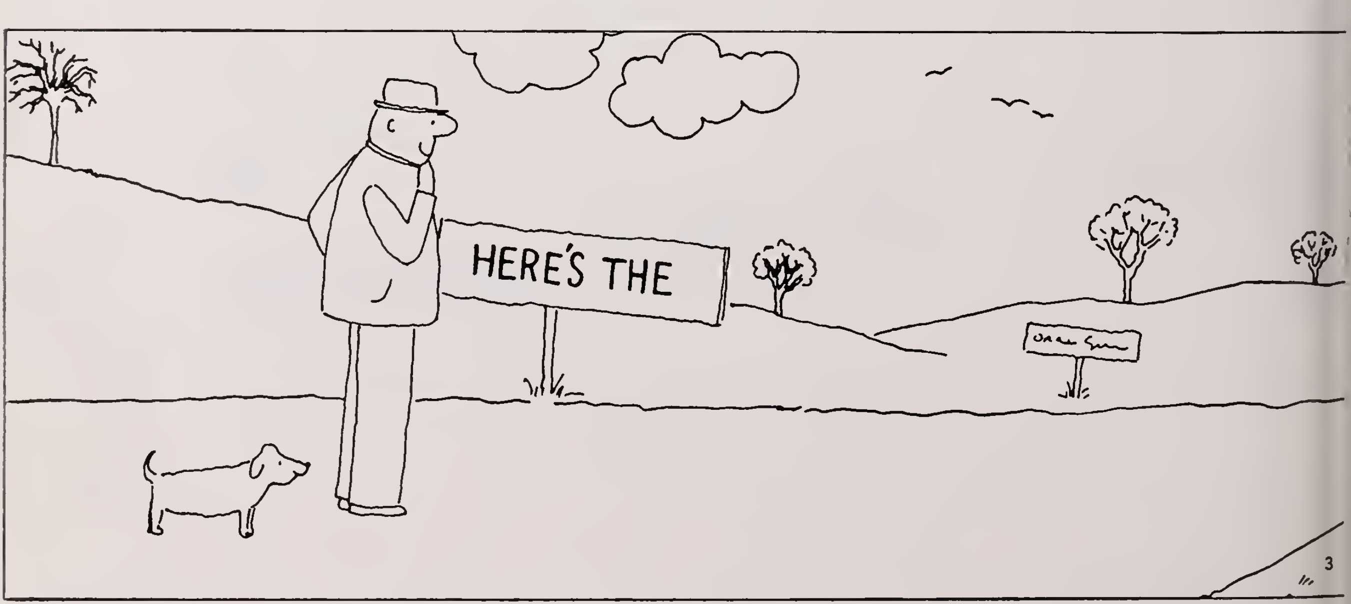
This was the second Festival Award for "The Distant Drummer." A year ago an award of outstanding merit was received at the Chicago International Film Festival.

"The Distant Drummer" is a series of 3 programs on the subject of drug abuse telecast in Washington over WRC-TV under the sponsorship of Medical Service and Group Hospitalization, Inc. The first film, entitled "A Movable Scene," was hosted by Robert Mitchum; the second, "Flowers of Darkness," by Paul Newman; and the third and final program, July 12, "Bridge from No Place," was hosted by Rod Steiger.

To book any of the films write the Public Relations Department of Medical Service, 550 12th Street, S.W., Washington, D. C. 20024.

A special committee of the National Research Council has formed, in response to interested scientists throughout the United States, a new organization, **Society for Neuroscience,** which will foster interdisciplinary communication and investigation among scientists from the many fields involved and at all levels of biologic organization. It will also seek to attract potential investigators, to advance their education, and to inform the general public of current research in this area and its implications. The Society will sponsor national meetings and sponsor local chapters to arrange meetings of scientists of different backgrounds interested in nervous systems, and it plans to establish a central source of information on interdisciplinary curricula and training programs in neuroscience. Inquiries may be addressed to the Society for Neuroscience, ℅ Dr. Louise H. Marshall, 2101 Constitution Avenue, N.W., Washington, D. C. 20418.

Dr. E. B. Howard, Executive Vice President of the American Medical Association, has announced some important **changes in the organization of the Division of Health Care Service.** Mr. Christ N. Theodore has been appointed Director



of the Division, which is involved in such areas as health manpower, accreditation of medical facilities, health care financing, emergency medical services, health care of the poor, health insurance, government medical services, problems of aging, and liaison with organizations in the health care field. Dr. Howard announced that, to focus efforts of the Division more sharply on these areas, 2 organizational changes are being made. The Vietnam Medical Care Program and staff services for the Council on National Security and the standing Committee on Disaster Medical Care are being transferred to the Executive Vice President's office under Mr. Leo Brown. The Department of Health Education is being moved to the Communications Division.

New officers of the **Women's Medical Society of the District of Columbia** are:

Dr. Naomi M. Kanof, *President-elect*; Dr. Roselyn P. Epps, *Secretary*; and Dr. Theresa T. Woo, *Treasurer*.

Dr. Agnes E. Schweitzer has taken office as President, succeeding Dr. Catharine Q. Knop, the immediate Past President.

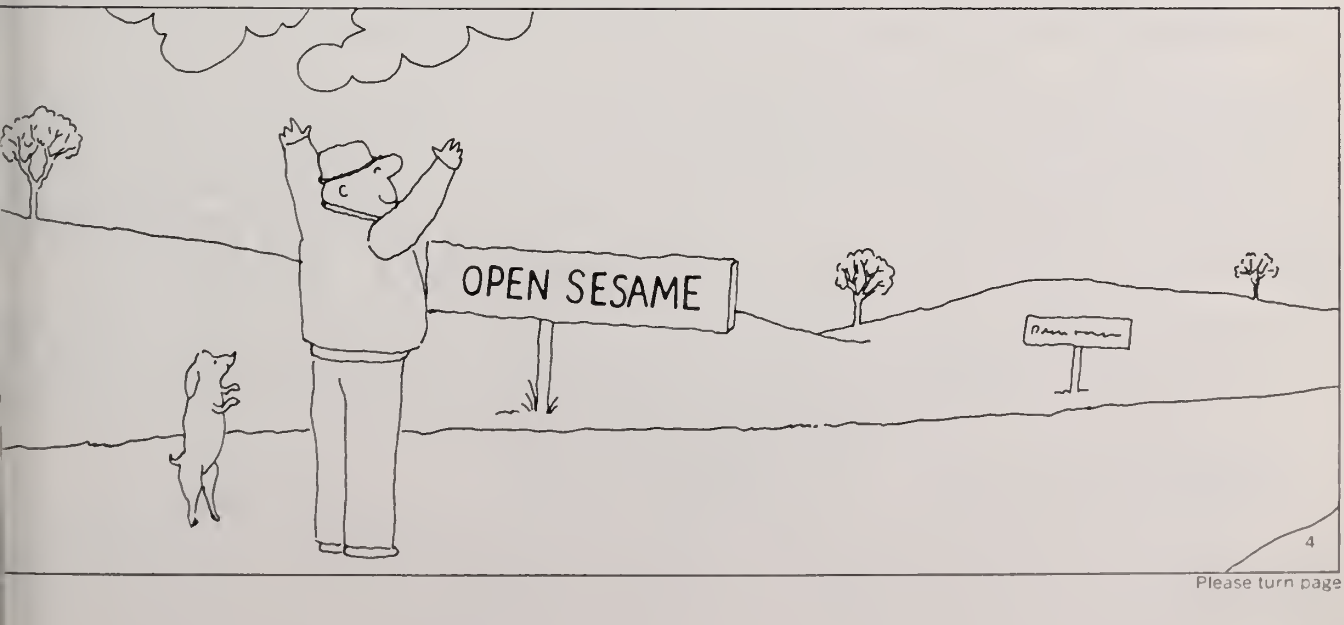
Dr. Jack R. Mills has been appointed **Assistant Director of the Children's Hearing and Speech Center of Children's Hospital of D. C.** He will be responsible for the diagnostic and therapeutic program in speech and language pathology at the Center. Dr. Mills comes to Children's from the position of Director of the Hearing and Speech Department of the Kennedy Institute, an agency affiliated with the Johns Hopkins Medical Institution in Baltimore.

Another appointment of interest at Children's is the new **Assistant Administrator, Mr. James E. J. Brunsgaard, Jr.,** of Oxon Hill, Md., who completed residency requirements for his Master's degree in Health Care Administration with the Division of Administration and Finance, Maryland Department of Hygiene. He served as Administrative Assistant at the Morris Cafritz Memorial Hospital, Washington, from 1966 to 1968.

Mrs. Jonathan M. Williams was named **Chairman of the Mental Health Committee of the Woman's Auxiliary to the American Medical Association** during the Auxiliary's 46th Annual Convention in New York, July 13–17.

Mrs. Williams, who was President of the Woman's Auxiliary to the Medical Society of the District of Columbia in 1963–1964, is currently serving a 3-year term as a member of the advisory committee to the Montgomery County (Md.) Mental Health Association.

George Washington University Medical Center has established a new **Department of Clinical Engineering** to be headed by Dr. Cesar A. Caceres, an authority on medical engineering. Dr. Caceres has been a member of the faculty of George Washington since 1960. The new department will encompass not only physicians and engineers but statisticians, analysts and programmers. The group will conduct studies on ways to improve medical services through the use of modern technology and automation.



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Mr. Theodore Hagans, Jr., General Manager of the New Dunbar Hotel, has been elected **President of the Health and Welfare Council of the National Capital Area.** Mr. Hagan, who has served the Council as Secretary for the past 2 years and is a member of Mayor Washington's Economic Development Committee, was elected to his new office at the Annual Luncheon Meeting of HWC at the Sheraton-Park Hotel, May 26.

The American College of Radiology opened a Washington office for permanent government liaison on August 1 to be headed by Mr. Otha W. Linton, formerly Director of Public Relations at the ACR headquarters in Chicago. The office will be located in Suite 304 of the Bethesda-Bradley Building at 6900 Wisconsin Avenue, Chevy Chase, Md.

Mr. William K. Melton, present ACR Director of Education, will move his activities to Washington. He will share responsibility for staff support of the Commission on Education with Mr. Clifford P. Wells, who is also director of audiovisual services for the ACR in Chicago.

Medical Service of the District of Columbia will move its offices at the end of this month to a new building at 550 12th Street, S.W., in the Southwest Redevelopment Area. Occupancy of the new offices will unite all Medical Service and Group Hospitalization, Inc. employees under a single roof for the first time in several years. The number of employees of the Plans has swelled from less than 300 in 1960 to over 1,000 today and the number of subscribers from about 800,000 in 1960 to a current 1,200,000. The new telephone number is 484-9200.

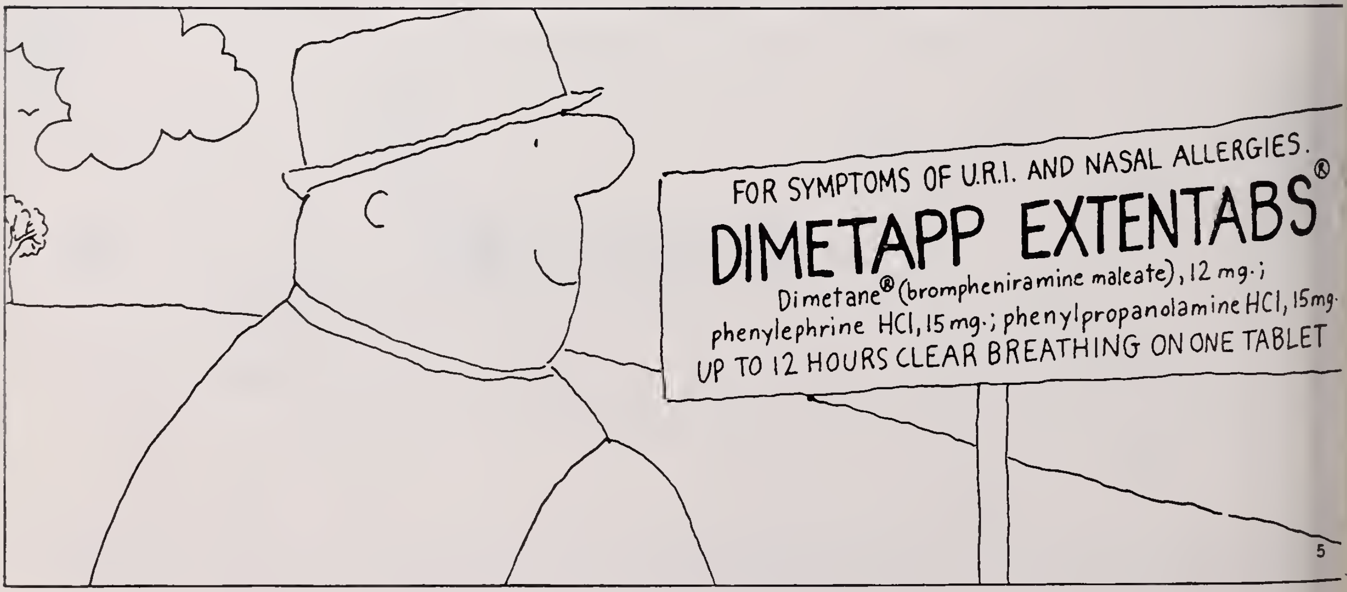
Mr. E. Claiborne Robins, President of the A. H. Robins Company of Richmond, Va., has made a contribution of 50 million dollars to the University of Richmond, of which he is an alumnus. This is in addition to more than 6 million dollars in previous gifts. It is believed that this latest contribution is the largest single gift by an individual in the history of American education. It is given with "no strings attached" to be used by the trustees for the educational betterment of the School.

The Robins Company is one of the best financial supporters of the MEDICAL ANNALS. It also supports the Medical Society's Scientific Assembly and is responsible for the Community Service Award which is given each year during the Assembly to a physician selected by the Society's Committee on Awards.

▶ PERSONALS

Dr. Murray Grant, District of Columbia Director of Public Health, has announced his resignation, to become effective in October. Dr. Grant succeeded Dr. Daniel L. Finucane as Health Officer in 1962 after serving as Director of Public Health of Prince George's County (Maryland) for 3 years. He has accepted a position as Executive Vice President of the Maimonides Medical Center in Brooklyn, N. Y.

The United Mine Workers of America announces that it has created a new Department of Occupational Health to be headed by **Dr. Lorin**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E. Kerr, Associate member of the D. C. Medical Society. Dr. Kerr is currently Assistant to the Executive Medical Officer of the UMWA Welfare and Retirement Fund.

Dr. Kerr was reëlected Chairman of the Board of Directors of Group Health Association of America at its meeting at the Waldorf-Astoria Hotel in New York City, June 7.

Dr. George E. Schreiner, Professor of Medicine at Georgetown University and Director of its Renal and Electrolyte Division, was elected Vice President of the International Society of Nephrology at its recent meeting, held in conjunction with the Fourth International Congress of Nephrology, in Stockholm, Sweden, June 22–28. He will serve as an officer and member of the Executive Committee for 3 years. The Fifth International Congress of Nephrology will be held in Mexico City in the fall of 1972.

Dr. William R. Felts was elected to fill a 1-year term on the Board of Trustees of the American Society of Internal Medicine which became open when Dr. Joseph T. Painter was chosen President-elect. Dr. Felts has authored the "Legislative Spotlight" column in *The Internist* during the past 2 years. He is Associate Professor of Medicine at George Washington University and Chairman of the Pharmacy and Therapeutics Committee, University Hospital, and a member of the Executive Committee, University Clinic.

Dr. John Ogle Warfield, Jr. resigned in April from the Bionetics Research Laboratory, Kensington, Md. and has accepted a position with the Bureau of Special Services of the D. C. Department of Public Health. Before Dr. Warfield discontinued private practice in the field of general surgery he had served as Chairman of the Surgical Department of the Washington Hospital Center, Children's Hospital of D. C., Arlington Hospital, and Garfield Hospital before the latter merged into the Center.

Dr. Lawrence E. Putnam has been promoted to Clinical Professor of Medicine at George Washington University School of Medicine. Since 1947 he has been in charge of the Course on Physical Diagnosis.

►NEW MEMBERS

Active

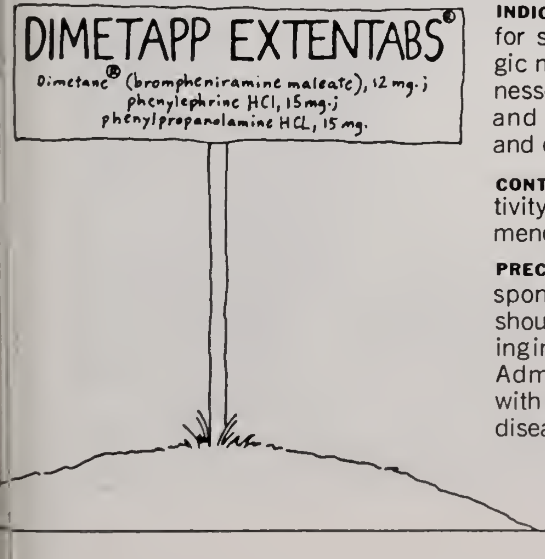
David P. Allen, M.D. Office: 1646 Columbia Road, N.W. Born in Lumberton, N. C. Medical degree: Meharry Medical College, 1936. Specialty: Otolaryngology.

John Otteson Allin, M.D. Office: Georgetown University Hospital. Born in Washington, D. C. Medical degree: University of Pennsylvania, 1959. Specialty: Psychiatry.

Joe Morris Blumberg, M.D. Office: Oscar B. Hunter Memorial Laboratory, 915 19th Street, N.W. Born in Baltimore, Md. Medical degree: Emory University, 1933. Specialty: Pathology.

Sheldon Boruchow, M.D. Office: 3801 Connecticut Avenue, N.W. Born in Brooklyn, N. Y. Medical degree: Georgetown University, 1960. Specialty: Psychiatry.

Joseph D. Croft, Jr., M.D. Office: 1234 19th Street, N.W. Born in Evanston, Ill. Medical degree: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Cornell Medical College, 1962. Specialty: Internal Medicine.

Floyd Bruce Galler, M.D. Office: 1616 18th Street, N.W. Born in Chicago, Ill. Medical degree: Harvard University, 1959. Specialty: Psychiatry.

Michael John Grana, M.D. Office: 5415 Connecticut Avenue, N.W. Born in Swissvale, Pa. Medical degree: Georgetown University, 1957. Specialty: Psychiatry.

Anita Iff Lao, M.D. Office: 2141 K Street, N.W. Born in Switzerland. Medical degree: George Washington University, 1963. Specialty: Obstetrics and Gynecology.

Richard A. McConnaughy, M.D. Office: National Academy of Sciences. Born in Machias, Maine. Medical degree: University of Michigan, 1963. Specialty: Internal Medicine.

Chung Soon Park, M.D. Office: D. C. General Hospital. Born in Korea. Medical degree: Soo Do Medical College, Seoul, Korea, 1950. Specialty: Pathology.

James Phillip Shaper, M.D. Office: 916 19th Street, N.W. Born in Louisville, Ky. Medical degree: Cincinnati College of Medicine, 1963. Specialty: Dermatology.

Joseph William Vogg, M.D. Office: Georgetown University Hospital. Medical degree: University of Illinois, 1962. Specialty: Otolaryngology.

Elliott Charles Wilner, M.D. Office: National Institutes of Health. Born in Philadelphia, Pa. Medical degree: George Washington University, 1962. Specialty: Neurology.

Philip Witorsch, M.D. Office: Washington Hospital Center. Born in New York, N. Y. Medical degree: New York University, 1962. Specialty: Internal Medicine (Pulmonary Diseases).

Associate

Loretta E. Alvarez, M.D. Office: D. C. General Hospital. Born in the Philippines. Medical degree: University of Santo Tomas, Manila, 1956. Specialty: Anesthesiology.

Daniel Gordon Lipman, M.D. Office: St. Elizabeths Hospital. Born in London, England. Medical degree: Middlesex Medical School, England, 1940. Specialty: Psychiatry.

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► OBITUARIES

Jerome Francis Crowley, M.D.

(1892–1969)

Dr. Jerome F. Crowley, obstetrician and gynecologist who practiced in the Washington area for almost 50 years, died, August 10, 1969 at his home, 2801 New Mexico Avenue, N.W.

A Washingtonian, born December 6, 1892, Dr. Crowley received his Bachelor of Science degree in 1916 and his medical degree in 1918, both from Georgetown University. He interned at St. Elizabeth's Hospital in Youngstown, Ohio, and at Georgetown University Hospital, and trained as a resident in his specialty at Columbia Hospital for Women, 1919 to 1920.

Dr. Crowley continued his association with Columbia Hospital until he retired 2 years ago. Upon his retirement an annual guest lecture was named for him. He was Chief of Staff at the Hospital from 1940 to 1946 and a member of the Board of Directors for 23 years. During his long practice he was also attending physician in obstetrics and gynecology at Doctors Hospital and consulting gynecologist to Mt. Alto Veterans Hospital.

Dr. Crowley began teaching at Georgetown in 1918. He was Instructor in Histology, Instructor in Physiology, later Assistant Professor of Obstetrics and Gynecology, and Associate Professor of Obstetrics and Gynecology from 1932 to 1946. He also served on the teaching staff of Doctors Hospital.

Elected an Active member of the Medical Society of the District of Columbia in 1919, he became a Life member in 1959. He was a member of the American Medical Association, a Fellow of the American College of Surgeons, a diplomate of the American Board of Obstetrics and Gynecology, and a member of the Southern Medical Association. He was a member and Past President of the Washington Gynecological Society, the Osler Society, and the Georgetown Clinical Society. At the Clinical Society's Old Timers' Meeting in 1955 he was presented with the Society's Award of Merit. He was also a Rotarian and a life member of the Columbia Country Club.

Surviving him are his wife, Mrs. Lydia Farrell Crowley; 2 sons, James F. Crowley, of Longport, N.J., and Jerome F. Crowley, Jr., of Potomac, Md.; a daughter, Mrs. Katherine P. Longstreth,

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of Longport, N. J.; and a sister, Miss Mary J. Crowley, of Washington.

Homer King Vann, M.D.

(1902-1969)

Dr. H. King Vann, otolaryngologist in Washington and vicinity for more than 35 years, died, June 12, 1969, at the University Hospital in Baltimore. At the time of his death he maintained offices at 6216 Baltimore Blvd. in Riverdale, Md., and at 9300 Columbia Blvd. in Silver Spring, Md.

Dr. Vann was born in Attalla, Alabama, January 21, 1902. He enrolled for premedical study at the University of Florida and graduated in medicine from the University of Maryland in 1929. After interning a year each at the Maryland General Hospital in Baltimore and at the Gill Memorial Hospital in Roanoke, Va., he continued his postgraduate training in otolaryngology at Episcopal Eye, Ear and Throat Hospital in Washington. He began his private practice in the District of Columbia in 1933.

Dr. Vann was on the Senior Attending Staff of the Washington Hospital Center and was especially interested in the Hearing and Speech Clinic at the Center. He was on the Medical Advisory Board to Children's Hospital and a member of the active staff at Prince George's General and Holy Cross Hospitals in Maryland.

He was a Fellow of the American Academy of Otolaryngology, a member of the American Medical Association, the Medical and Chirurgical Faculty of Maryland, and the Montgomery County (Md.) and Prince George's County (Md.) Medical Societies. He was elected to Active membership in the Medical Society of the District of Columbia in 1935 and transferred to Associate membership in 1960.

He was a Director of the Citizens Bank of Maryland and a Board member of the Boys Club of Washington. Because of his interest in farming communities in Montgomery and Howard Counties, he belonged to the Enterprise Farm Club. He was also a member of the Columbia Country Club in Chevy Chase, Md., and the Port Royal Beach Club of Naples, Fla.

Surviving him are his wife, Mrs. Mary Beall Vann, of New Year's Gift, Glenwood, Md., and a daughter, Dr. Nina Vann Jeanes.

Frederick Davenport Drew, M.D.

(1913–1969)

Dr. Frederick D. Drew, Chief of Radiotherapy at Freedmen's Hospital, died, July 12, 1969, at the Hospital after a brief illness. He lived at 1600 Portal Drive, N.W.

Dr. Drew was born in Cambridge, Mass., March 2, 1913. He earned a Bachelor's degree in biophysics from the Massachusetts Institute of Technology in 1934 and a Master's degree in biophysics from Harvard University in 1939.

After serving on the faculty of Livingstone College, Salisbury, N. C., as Instructor in Physics and Chemistry from 1939 to 1948, Dr. Drew came to Washington to study medicine at Howard University. He received his medical degree in 1952 and interned at Freedmen's the following year. After 3 years' training as Resident in Radiology at Freedmen's he stayed on as Assistant Radiologist and joined the faculty of Howard as Instructor in Radiology. At the time of his death he was Chief of Radiotherapy at the Hospital and Professor of Radiology at Howard. He served these institutions continuously except for 1 year, 1958–59, which he spent as staff radiologist at the Veterans Administration Hospital in West Haven, Conn., and as Clinical Instructor in Radiology at Yale University.

Dr. Drew was certified by the American Board of Radiology and was a Fellow of the American College of Radiology and the International College of Radiology. Elected an Active member of the Medical Society of the District of Columbia in 1955, he was a member of the American Medical Association, the National Medical Association, the Radiological Society of North America, and the Medico-Chirurgical Society of the District of Columbia.

He leaves his wife, Mrs. Anne Swanson Drew, a son, Frederick D., Jr., and a daughter, Constance Delores, all of the home address, and another daughter, Jacqueline Anne Drew, of Chicago.

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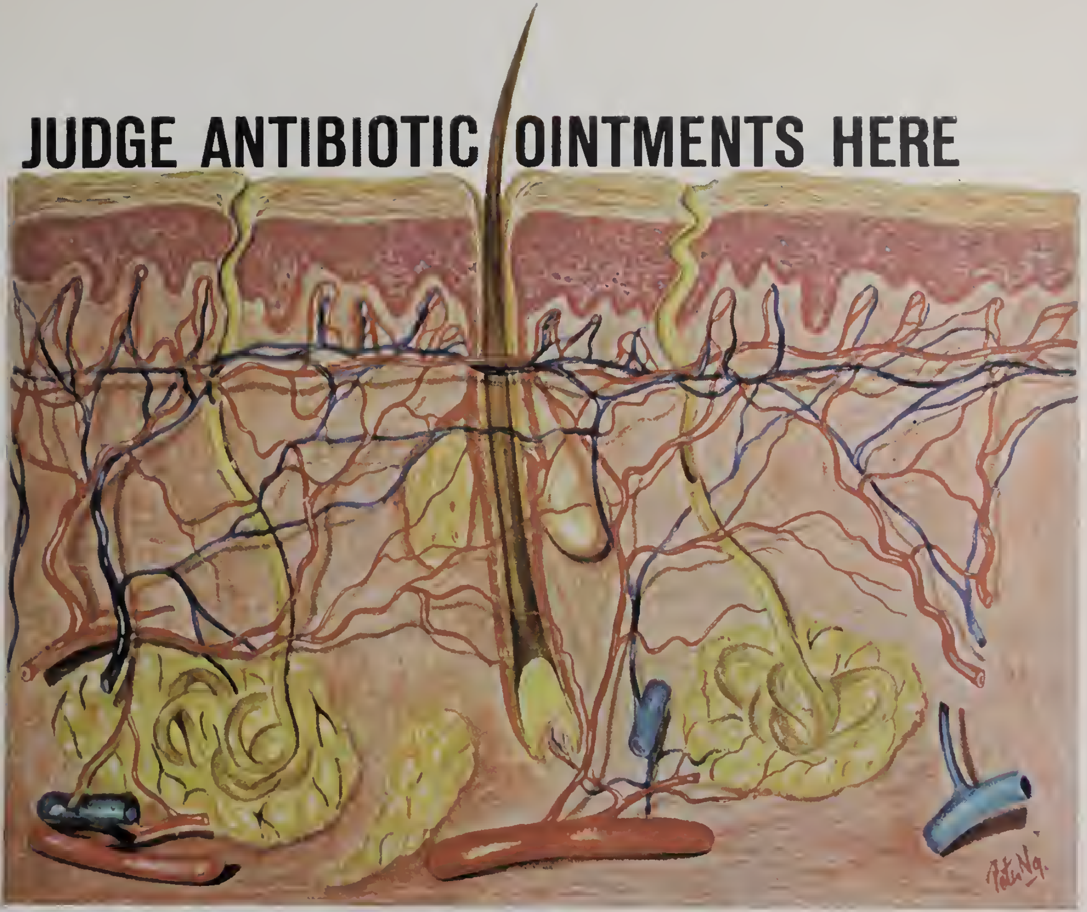

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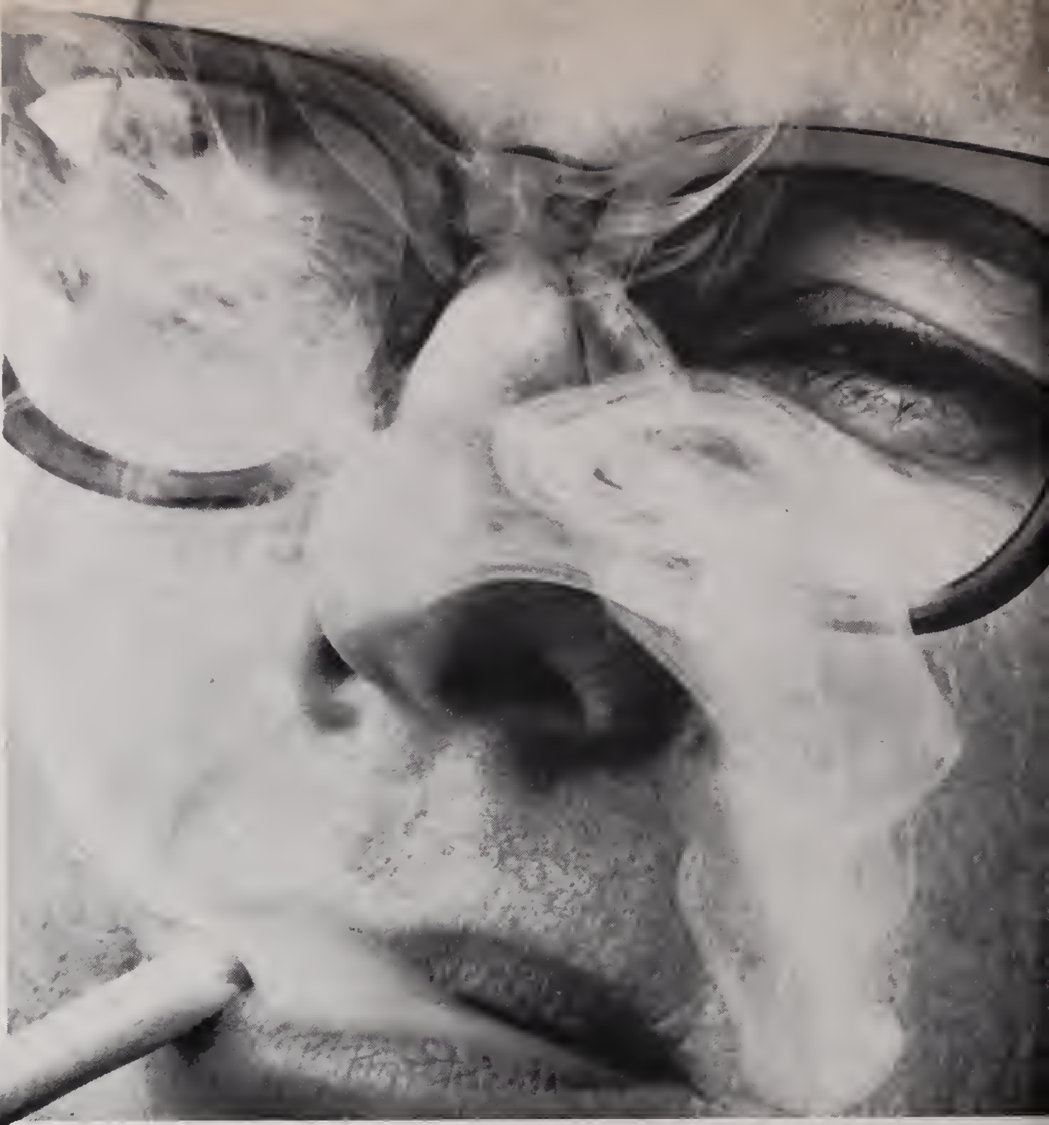

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Side Effects: Transient flushing, gastric disturbances, minor skin rashes and allergies may occur in some patients, seldom requiring discontinuation of the drug.

Dosage: 1 or 2 Timespan Tablets morning and night.

How Supplied: Timespan Tablets—150 mg nicotinyl alcohol in the form of the tartrate salt —bottles of 50.

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or relief of ischemic symptoms

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ectivity of action—relaxes the musculature of peripheral blood vessels.

gh degree of safety—side effects seldom require discontinuation of therapy.

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ENDURETS
PROLONGED - ACTION
TABLETS

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Preludin is indicated only as an anorexigenic agent in the treatment of obesity. It may be used in simple obesity and in obesity complicated by diabetes, moderate hypertension (see Precautions), or pregnancy (see Warning).
Contraindications: Severe coronary artery disease, hyperthyroidism, severe hypertension, nervous instability, and agitated prepsychotic states. Do not use with other CNS stimulants, including MAO inhibitors.
Warning. Do not use during the first trimester of pregnancy unless potential benefits outweigh possible risks. There have been clinical reports of congenital malformation, but causal relationship has not been proved. Animal teratogenic studies have been inconclusive.
Precautions: Use with caution in moderate hypertension and cardiac decompensation. Cases involving abuse of or dependence on phenmetrazine hydrochloride have been reported. In general, these cases were characterized by excessive consumption of the drug for its central stimulant effect, and have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations or delusions. Do not exceed recommended dosage
Adverse Reactions: Dryness or unpleasant taste in the mouth urticaria, overstimulation, insomnia, urinary frequency or nocturia, dizziness, nausea, or headache.
Dosage: One 25 mg. tablet b.i.d. or t.i.d. Or one 75 mg. Endurets tablet a day, taken by midmorning.
Availability: Pink, square, scored tablets of 25 mg. for b.i.d. or t.i.d. administration, in bottles of 100 and 1000.
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NATIONAL & REGIONAL MEETINGS

September 24–26: The Medical Society of the District of Columbia. Mayflower Hotel, Washington. Address: Mr. Thomas Sadler, Executive Director, 2007 Eye Street, N.W., Washington, D. C. 20006.

September 26–October 3: American Academy of General Practice. Philadelphia. Address: Mr. Mac F. Cahal, Executive Director, Volker Blvd. at Brookside, Kansas City, Mo. 64112.

September 29: Society for Pediatric Radiology. Washington Hilton Hotel, Washington. Address: Dr. John L. Gwinn, Secretary-Treasurer, 4650 Sunset Blvd., Los Angeles, Calif., 90027.

September 30–October 3: American Roentgen Ray Society. Washington Hilton Hotel, Washington. Address: Dr. Ted F. Leigh, Executive Secretary, Emory University Clinic, Atlanta, Ga. 30322.

October 6–10: American College of Surgeons. Fairmont Hotel, San Francisco. Address: Dr. John Paul North, Director, 55 East Erie Street, Chicago, Ill., 60611.

October 9–10: Georgetown Conference on Surface Analysis. Marriott Twin Bridges Motor Inn, U. S. 1. Address: Mr. Joseph M. English, 4380 MacArthur Blvd., N.W., Washington, D. C. 20007.

October 11–12: American Association of Ophthalmology. Palmer House, Chicago. Address: Mr. Lawrence A. Zupan, 1100 17th Street, N.W., Washington, D. C. 20036.

October 12–17: American Academy of Ophthalmology and Otolaryngology. Palmer House, Chicago. Address: Dr. C. M. Kos, Secretary-Treasurer, 15 Second Street, S.W., Rochester, Minn. 55901.

October 16–19: Medical Society of Virginia. Cavalier Hotel, Virginia Beach, Va. Address: Mr. Robert I. Howard, Executive Director, 4205 Dover Road, Richmond, Va. 23221.

October 18–23: American Academy of Pediatrics. Palmer House, Chicago. Address: Dr. Robert G. Frazier, Executive Director, 1801 Hinman Ave., Evanston, Ill. 60204.

October 19–22: American College of Gastroenterology. Rice Hotel, Houston. Address: Mr. Daniel Weiss, Executive Director, 299 Broadway, New York, N. Y. 10007.

October 22–25: American College of Obstetricians and Gynecologists (District IV). Shoreham Hotel, Washington. Address: Dr. Michael Newton, Executive Director, 79 West Monroe Street, Chicago, Ill. 60603.

October 29–November 2: American College of Chest Physicians. Palmer House, Chicago. Address: Dr. Alfred Soffer, Executive Director, 112 East Chestnut Street, Chicago, Ill. 60611.

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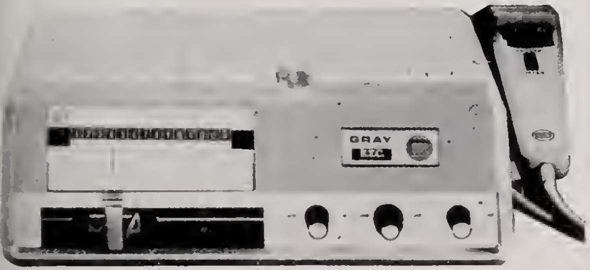

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Miscellaneous

Occupational Therapy—A New Life for the Disabled. (P.A.P. No. 420). Joel A. Levitch. Provides a concise, informative picture of a career as occupational therapist. 28 pp. Price, 25 cents. Public Affairs Committee, 381 Park Avenue South, New York, N. Y. 10016.

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Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

SANDOZ PHARMACEUTICALS, HANOVER, N.J. SANDOZ 69-384

October
1969

VOLUME XXXVIII • NUMBER 10

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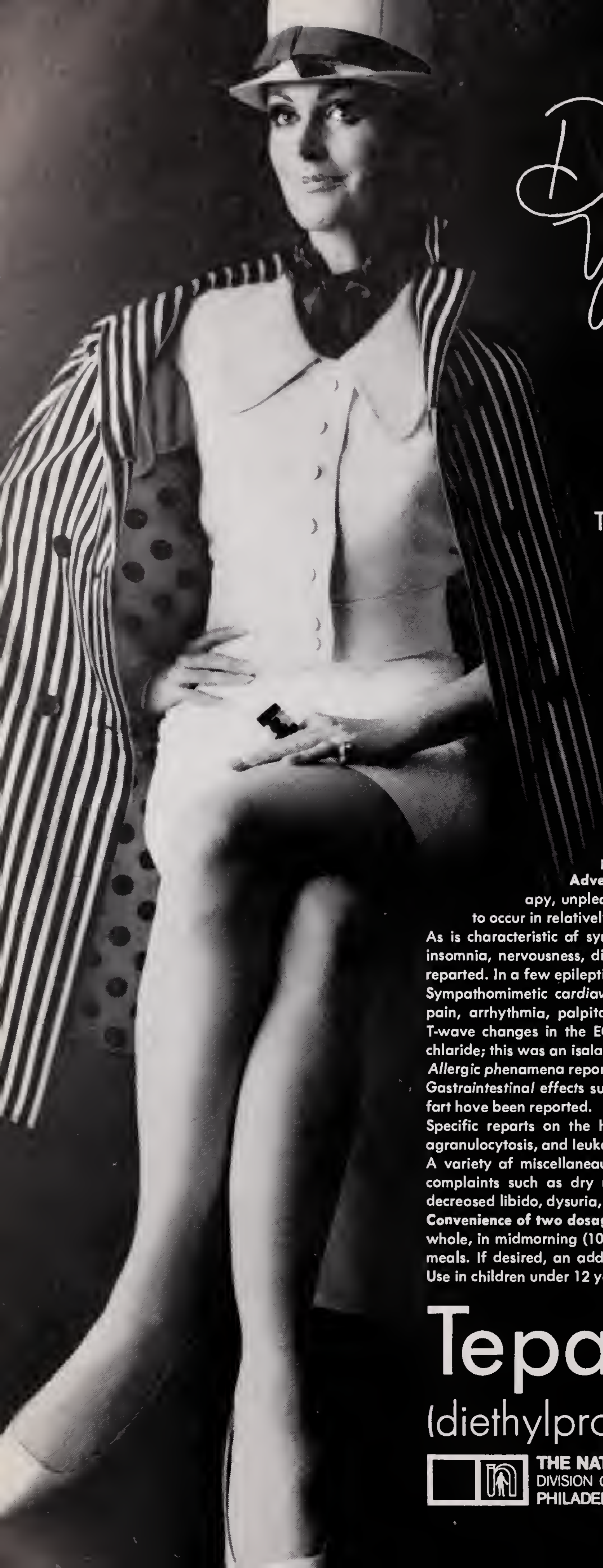
MEDICAL ANNALS of the District of Columbia

THE MEDICAL SOCIETY of the DISTRICT OF COLUMBIA

Annual Business Meeting
November 19, 1969—8:00 P.M.



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As is characteristic of sympathomimetic agents, it may occasionally cause *CNS effects* such as insomnia, nervousness, dizziness, anxiety, and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported.

Sympathomimetic *cardiovascular effects* reported include ones such as tachycardia, precordial pain, arrhythmia, palpitation, and increased blood pressure. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others.

Allergic phenomena reported include such conditions as rash, urticaria, ecchymosis, and erythema.

Gastrointestinal effects such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported.

Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia.

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(continuous release form)

(diethylpropion hydrochloride)

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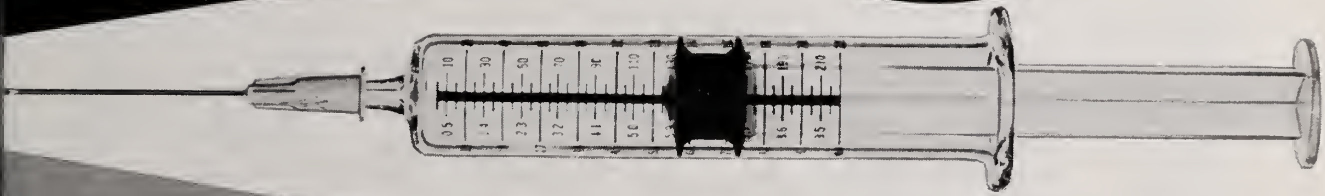

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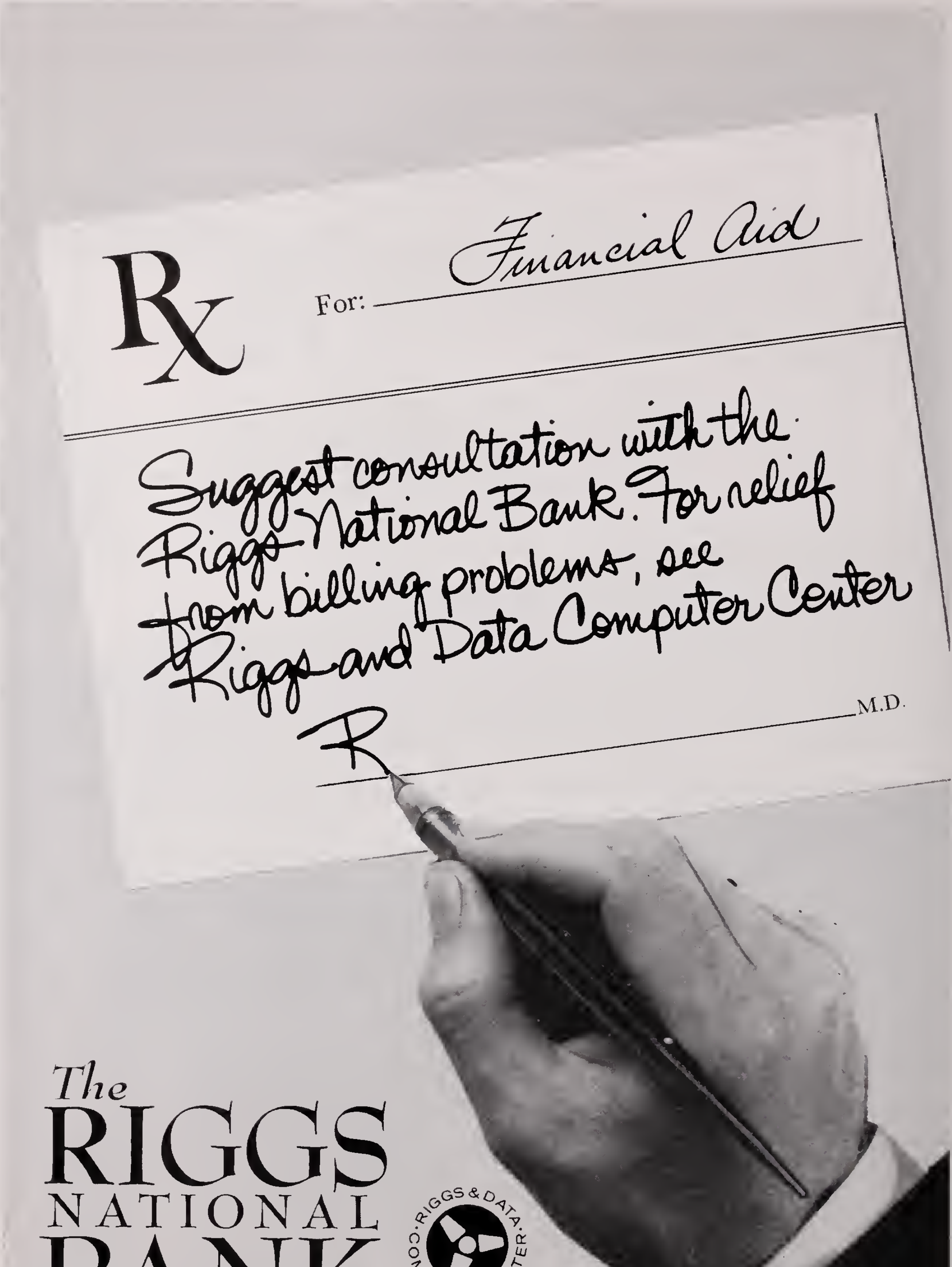

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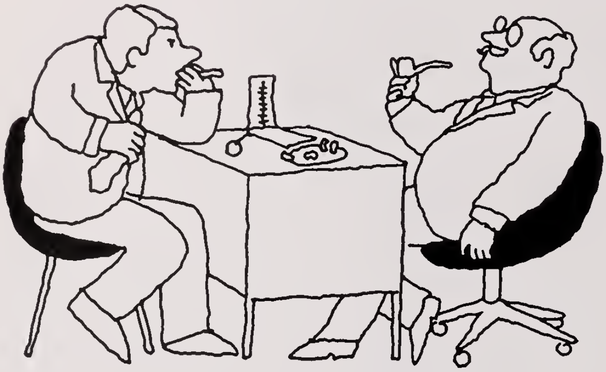
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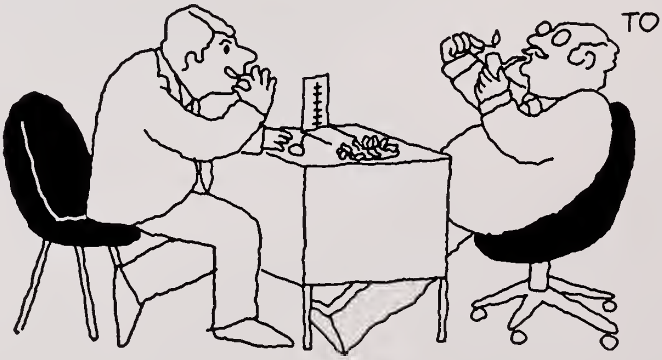
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corticosteroids, ACTH, or digitalis. Severe salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients. *Adverse Reactions:* The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angiitis are possible. *Average Dosage:* One tablet daily with breakfast. *Availability:* Pink, single-scored tablets in bottles of 100 and 1000. (B)46-600-C

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SIDE EFFECTS: Similar to those reported with either constituent alone.

Perphenazine: Should not be used indiscriminately. Use caution in patients with history of convulsive disorders or severe reactions to other phenothiazines. Likelihood of untoward actions greater with high doses. Closely supervise with any dosage. Side effects may be any of those reported with phenothiazine drugs: blood dyscrasias (pancytopenia, thrombocytopenic purpura, leukopenia, agranulocytosis, eosinophilia); liver damage (jaundice, biliary stasis); extrapyramidal symptoms (opisthotonos, oculogyric crisis, hyperreflexia, dystonia, akathisia, dyskinesia, parkinsonism) usually controlled by the concomitant use of effective antiparkinsonian drugs and/or by reduction in dosage, but sometimes persist after discontinuation of the phenothiazine; severe acute hypotension (of particular concern in patients with mitral insufficiency or pheochromocytoma); skin disorders (photosensitivity, itching, erythema, urticaria, eczema, up to exfoliative dermatitis); other allergic reactions (asthma, laryngeal edema, angioneurotic edema, anaphylactoid reactions); peripheral edema; reversed epinephrine effect; endocrine disturbances (lactation, galactorrhea, disturbances of menstrual cycle); grand mal convulsions; cerebral edema; altered cerebrospinal fluid proteins; polyphagia; paradoxical excitement; photophobia; skin pigmentation; failure of ejaculation; EKG abnormalities (quinidine-like effect); reactivation of psychotic processes; catatonic-like states; autonomic reactions such as dryness of the mouth, headache, nausea, vomiting, constipation, obstipation, urinary frequency, blurred vision, nasal congestion, and a change in the pulse rate; hypnotic effects; pigmentary retinopathy; corneal and lenticular pigmentation; occasional lassitude; muscle weakness; mild insomnia; significant unexplained rise in body temperature may suggest intolerance to perphenazine, in which case discontinue. Antiemetic effect may obscure signs of toxicity due to overdosage of other drugs or make diagnosis of other disorders such as brain tumors or intestinal obstruction difficult. May potentiate central nervous system depressants (opiates, analgesics, antihistamines, barbiturates, alcohol), atropine, heat, and phosphorous insecticides.

Amitriptyline: Careful observation of all patients recommended. Side effects include drowsiness (may occur within the first few days of therapy); dizziness; nausea; excitement; hypotension; fainting; fine tremor; jitteriness; weakness; headache; heartburn; anorexia; increased perspiration; incoordination; allergic-type reactions manifested by skin rash, swelling of face and tongue, itching; numbness and tingling of limbs, including peripheral neuropathy; activation of latent schizophrenia (however, the perphenazine content may prevent this reaction in some cases); epileptiform seizures in chronic schizophrenics; temporary confusion, disturbed concentration, or transient visual hallucinations on high doses; evidence of anticholinergic activity, such as tachycardia, dryness of mouth, blurring of vision, urinary retention, constipation, paralytic ileus; agranulocytosis; jaundice. The antidepressant activity may be evident within 3 or 4 days or may take as long as 30 days to develop adequately, and lack of response sometimes occurs. Response to medication will vary according to severity as well as type of depression present. Elderly patients and adolescents can often be managed on lower dosage levels.

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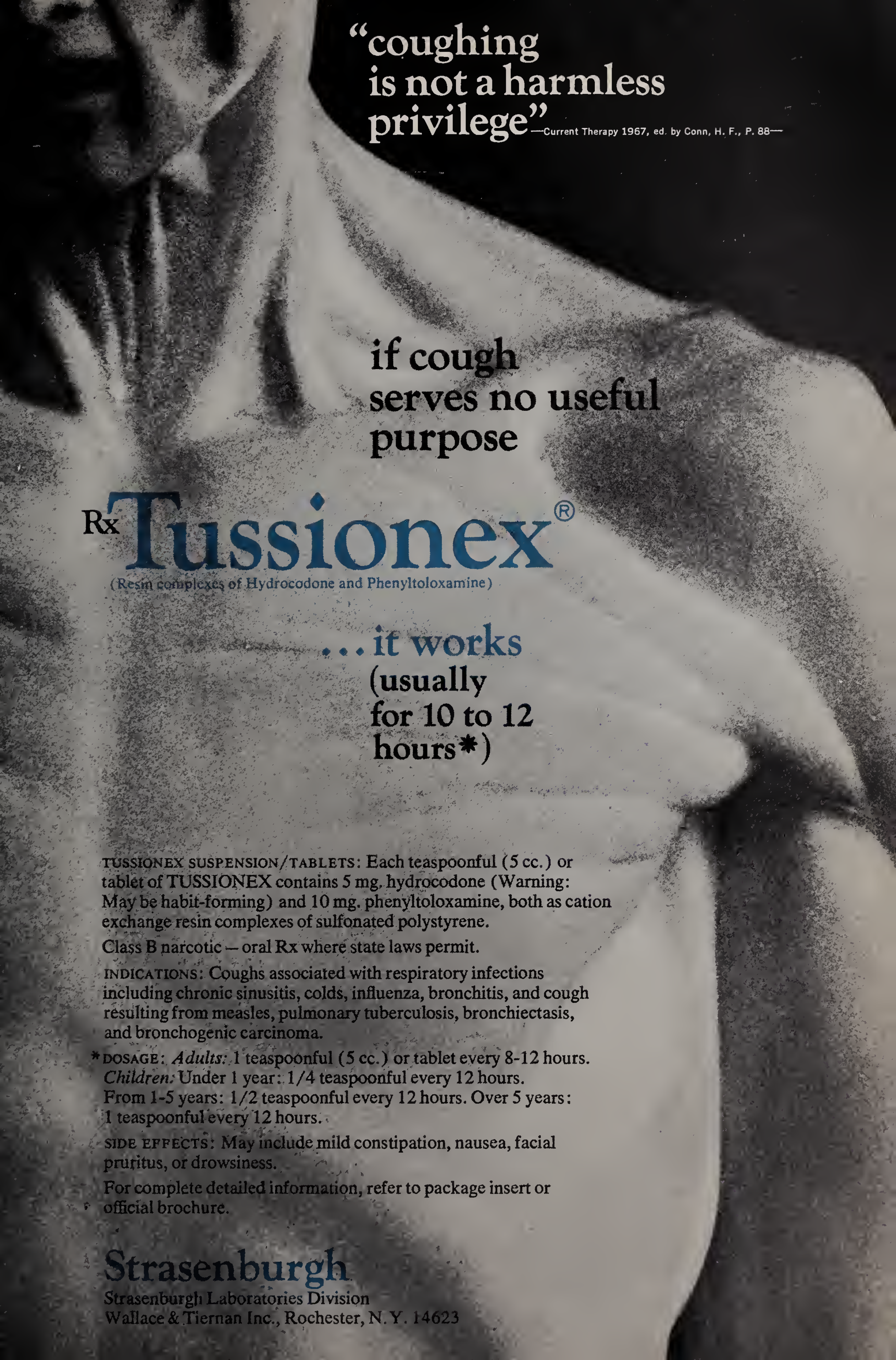
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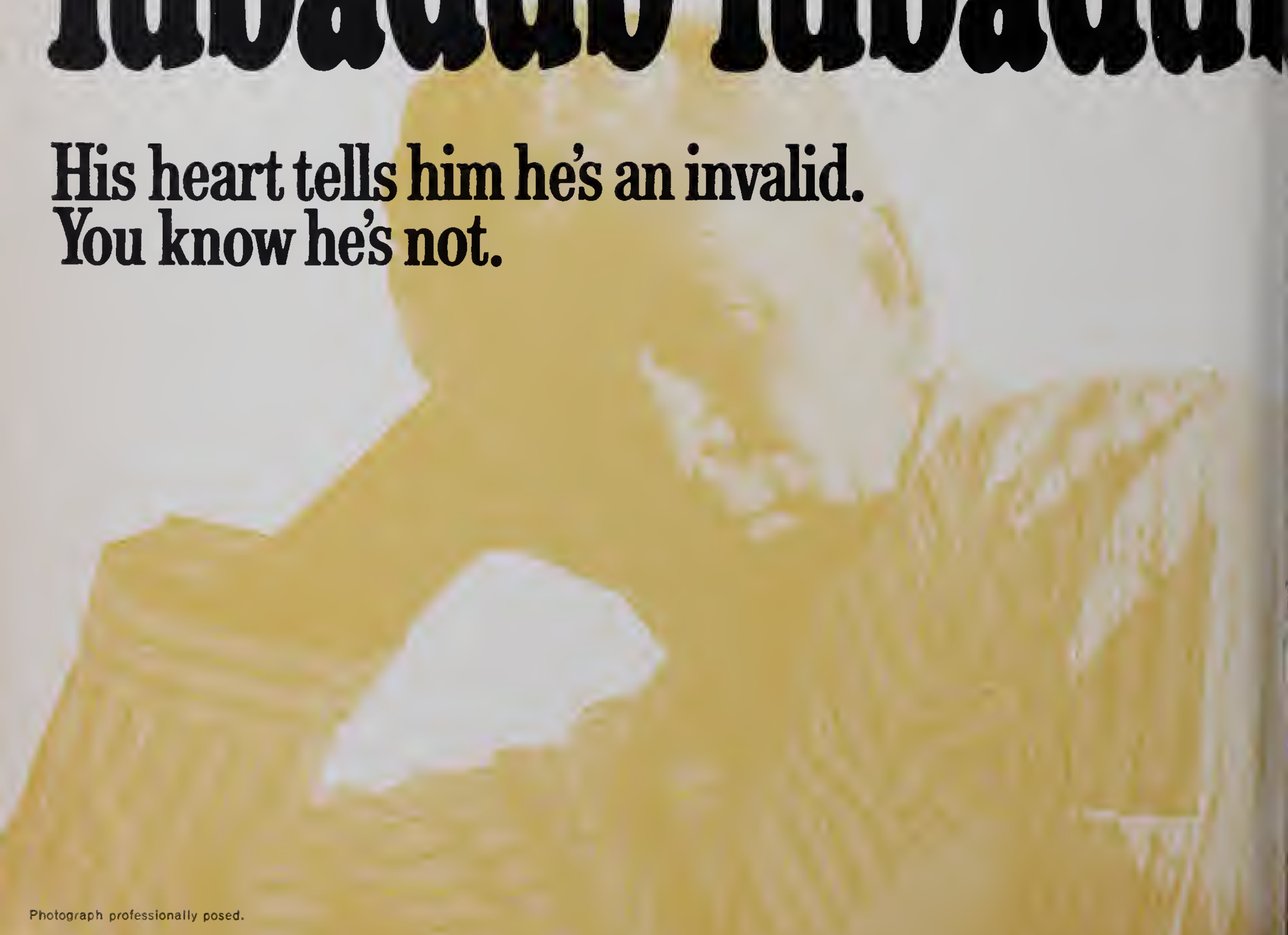

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ıxiety is expected in the cardiovascular patient.
little may even be desirable.

ıt when anxiety is exaggerated . . . when it
terferes with sleep . . . when it aggravates
rdiovascular symptoms, your help may
needed.

aturally, you'll want to reassure the patient.

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adjunctive therapy. It helps relieve anxiety
d tension specifically, yet gently.

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usually well tolerated as well as effective.
de effects are generally limited to transient
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Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration. Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

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Contraindicated: In individuals hypersensitive to oxytetracycline.

Warnings: Reduce usual oral dosage and consider antibiotic serum level determinations in patients with impaired renal function.

Use of oxytetracycline during the last trimester of pregnancy, neonatal period and early childhood may cause discoloration of developing teeth. This effect occurs mostly during long-term use of the drug, but it has also been observed in usual short-treatment courses.

During treatment with tetracyclines, individuals susceptible to photodynamic reactions should avoid direct sunlight; if such reactions occur, discontinue therapy.

Note: With oxytetracycline, phototoxicity is unknown and photoallergy very rare.

Precautions: Use of broad-spectrum antibiotics occasionally may result in overgrowth of nonsusceptible organisms. Where such infections occur, discontinue oxytetracycline and institute specific therapy. Increased intracranial pressure in infants is a possibility. Symptoms disappear upon discontinuation of therapy.

Adverse Reactions: Nausea, diarrhea, glossitis, stomatitis, proctitis, vaginitis and dermatitis, as well as reactions of an allergic nature, may occur but are rare.

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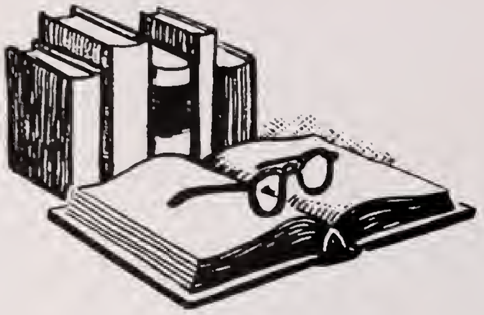

Book Reviews

American Academy of Orthopaedic Surgeons: Symposium on the Spine, Cleveland, Ohio, November 1967. Price, $19.50. Pp. 289, with 558 illustrations. St. Louis: Mosby, 1969.

The "Symposium on the Spine" is a collection of papers developed from The Course on the Spine presented in Cleveland, Ohio (November 1967) by The Committee on Injuries of the Academy of Orthopaedic Surgery. Its authors include most of the authorities whose contributions on "the back" have influenced current diagnostic and therapeutic trends.

The contents comprise, in particular, such excellent articles as: Acceleration-extension Injuries to the Cervical Spine, Lumbosacral Strain and Instability, Pathogenesis of Symptoms in Discogenic Low Back Pain, the Multiply-operated Back, Spondylolisthesis, and Operative and Nonoperative Treatment of Scoliosis.

The opening article on the subject of biomechanics of the spine should not discourage the reader from forging ahead to its other contributions which give information rather than ask questions. These, especially, are less esoteric and clinically more useful. Each individual paper has an excellent bibliography as well as adequate illustrations.

This is not a publication which would be of great value to medical students; rather, it should prove to be a valuable reference to those physicians who deal with patients with diseases of the spine.

Brantley P. Vitek, M.D.

American Academy of Orthopaedic Surgeons: Symposium on Sports Medicine, Oklahoma City, August 1967. Price, $15.00. Pp. 217, with 199 illustrations. St. Louis: Mosby, 1969.

The Symposium on Sports Medicine by the Academy is an accumulation of papers presented at the first Sports Medicine Symposium held in Oklahoma City, August 1967. Dr. Donald O'Donoghue and his committee, consisting of Drs. Jack Hughston, Fred Allman, Jr., Martin Blazina, Bruce Brewer, Joe King, Edmund McDonnell, James Nicholas, Fred Reynolds, and Donald Slocum, who have been most active in contributing to the subject of Sports Medicine, are credited with the compilation.

Unlike many books on the subject, it deals with a few of the common problems encountered in athletics, presents a clear and concise description of the problem, and a thorough evaluation of the treatment. The article on the Olympic Games by Dr. Allan Ryan is an excellent preamble and is followed by discussions of such problems as the effect of athletic activity on women, gastroenteritis in athletes, the preseason evaluation of athletes, and prevalent injuries of the shoulder and knee.

The format is excellent and the photographs are clear and accurate.

Dr. Fred Reynolds' article on the diagnosis of ligamentous injuries of the knee is an excellent review and is presented in such a manner as to allow all to understand this very important problem and some of the difficulties encountered in establishing the diagnosis.

All physicians actively engaged in the management of athletes, whether it be on a little league, high school, or college level, could profit by obtaining this text.

Stanford A. Lavine, M.D.

Medical Department, United States Army: Internal Medicine in World War II: Volume III. Infectious Diseases and General Medicine. Colonel Robert S. Anderson, Editor-in-Chief; W. Paul Havens, Jr., M.D., Editor for Internal Medicine. Prepared and published under the direction of Lt. General Leonard D. Heaton, the Surgeon General, United States Army. Price, $8.25. Pp. 778, with 123 illustrations, 6 plates, 8 charts and 105 tables. Washington, D. C. 20402: U. S. Government Printing Office, 1968.

This volume relates the Army experience in medical problems in all areas during World War II. Certain so-called tropical and exotic diseases with which physicians educated in the United States are usually not familiar are given special attention. An apparently not previously known one is described and called "Bullis fever." Diseases and disorders causing much time lost from duty are given extensive consideration. Infectious diseases, such as viral hepatitis, tending to become epidemic under military conditions, are especially well described. Rheumatic disorders, of which there were more than 500,000 cases, required special treatment centers. Prevalent skin disorders are described, and colored plates illustrate many. Finally, psychosomatic modification of medical problems and combat fatigue are evaluated.

This overall picture has undoubtedly been of great value in subsequent military activities and to present-day military personnel. Also, medical services of large industrial organizations, particularly those operating in foreign countries, could profit by the experiences outlined.

Paul Richmond, Jr., M.D.

(*Continued on page 22*)

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Book Reviews

(*Continued from page 20*)

Medical Department, United States Army: Medical Supply in World War II. Colonel Robert S. Anderson, Editor-in-Chief; Charles M. Wiltse, Ph.D., Litt. D., Editor for Medical Supply. Prepared and published under the direction of Lt. General Leonard D. Heaton, The Surgeon General, United States Army. Price, $8.25. Pp. 662, with 149 illustrations. Washington, D. C. 20402: U. S. Government Printing Office, 1968.

This is one of the volumes of the official history of the Medical Department of the United States Army in World War II prepared by the Historical Unit of the United States Army Medical Service. This most recent volume is part of the administrative series and concerns medical supplies in World War II. There is a clinical series which concerns the actual practice of medicine in World War II. This volume is the last of the series which concerns strictly administrative problems and as such has rather limited interest for physicians. It is, however, a very complete and well-documented history, although this does make for somewhat dry reading. Parts of the book, however, are very interesting and concern agents of manufacture and supply of which the military physician might not be aware.

Those physicians who served in the United States Army in World War II and were concerned over the lack of supply or the excess of supply in certain areas might be interested in reading this volume to find out the difficulties which the medical supply department did have. The enormity of the supply problem in World War II staggers the imagination, with over 7,000 standard medical items of varying priorities. The first portion of the book deals with procurement and distribution of medical supplies in the Zone of the Interior, the second portion concerns the war in Europe, and the third portion the war in the East. Each of these areas had its particular supply problems and there were various, sometimes ingenious solutions to these problems.

This is a carefully documented, well written book, although somewhat dry in its material, and would be of value only to those physicians who have a particular interest in this area or for the student of military history.

Maurice J. Casey, M.D.

Organization and Administration of Health Care: Theory, Practice, Environment. Richard L. Durbin, M.B.A., M.P.A., and Herbert W. Springall, M.P.H. Price, $9.85. Pp. 248, with 51 illustrations. St. Louis: Mosby, 1969.

This book is divided into 5 parts, namely, Spectrum of Administration, Environment and Organization, Resources and Application, Implementation, and Projection.

The first part of the book discusses the history of and methods of organization and management, e.g., scientific management, human relations, and bureaucracy. The case hospital is given as an example of the administrative framework inherent in a coöperative study of hospitals.

The extent of Government involvement in medicine today may surprise those who have not counted the figures. The Government accounts for about 70 per cent of hospital beds in the country and 32 per cent of the institutions, but it handles only about 34 per cent of the admissions. The Government accomplishes this care by either building its own hospitals or buying the services from existing hospitals. Programs such as the Hill-Burton are discussed, also the impact of Medicare and Social Security on medical care of older Americans. As Medicare became operational hospitals were not internally equipped to cope with it, and physicians were not psychologically equipped for it.

This larger spectrum of health care requires delegation of authority and responsibility to the point closest to the activity having qualified personnel. The patient care system which is the most human-oriented, the nursing profession, needs change both as a profession and in the utilization of its service personnel.

The rising costs of health care and third-party payers are causing more outpatient or ambulatory clinics to be built and staffed. The case hospital industrial engineering studies are very detailed; the numerous tables and charts appear too technical for the average administrator. It is stated that 65 to 70 per cent of total hospital costs represent salaries of hospital employees.

In the future the greatest need is to project organization and management in health care beyond traditional patterns. A health university is proposed, with responsibilities for finding new knowledge, teaching it to students, and experimenting with ways of applying this knowledge. The American public is demanding change in health care, but the rising costs of medical care are forcing hospitals to take a realistic look at their practices and to make some attempt at eliminating unnecessary duplication and fringe activities.

This book presents health care as a system. It is well written and up-to-date, but it is best used as a reference volume for health administrators.

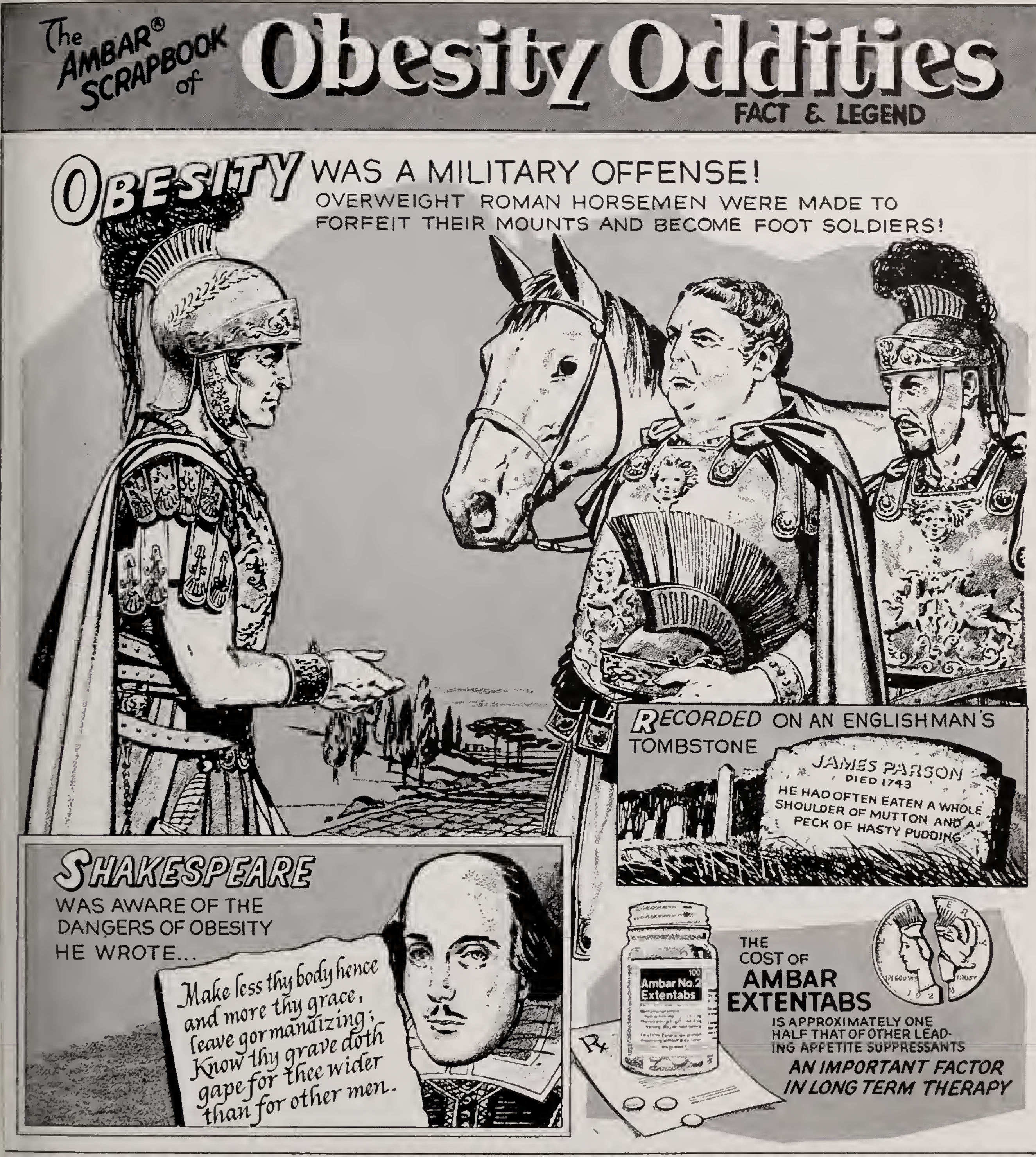
Bennie A. Moxness, M.D.

Introduction to Acid-Base and Electrolyte Balance, 5th ed. Gösta Rooth. Price (paper), $3.50. Pp. 80. New York: Barnes & Noble, 1969.

This compendium on acid-base balance and electrolyte balance discusses the general aspect in considerable detail. A number of clinical problems are presented with the subsequent changes in blood electrolytes and pH. The use of Seggiard-Andersen nomograms are aptly used to illustrate acid-base data in various conditions, such as diabetic ketosis and salicylate poisoning.

While authors admit that there are many books on acid-base and electrolyte balance, their aim is to present the problem in a practical way, and this is well achieved.

Vernon E. Martens, M.D.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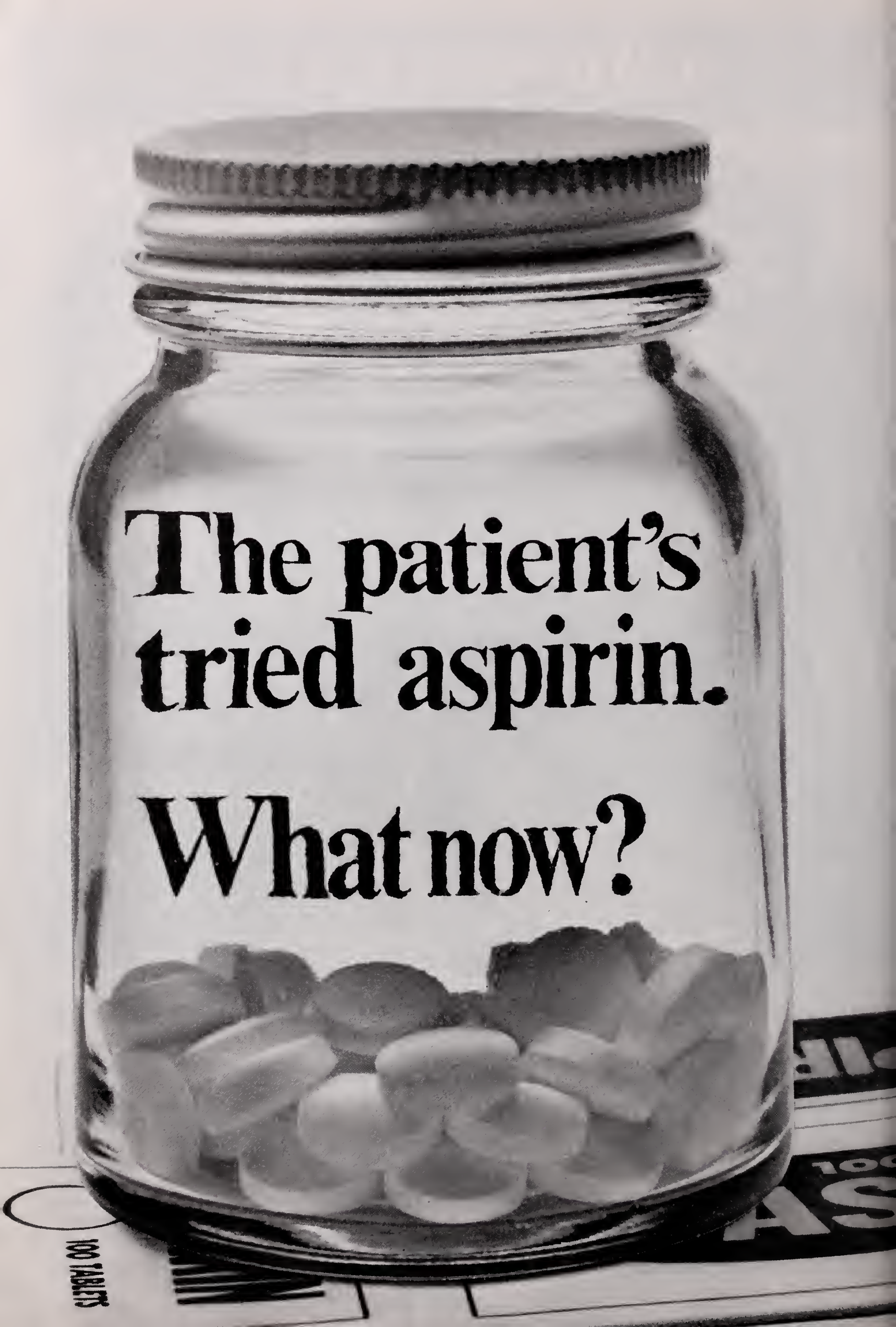
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Precautions: Keep out of reach of children. Not recommended for patients 12 years old or less. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate in susceptible persons—as alcoholics, ex-addicts, severe psychoneurotics—has resulted in dependence or habituation. Withdraw gradually after prolonged excessive dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance, with resultant slowed reactions and impaired judgment and coordination. If drowsiness, ataxia or visual disturbances (impairment of accommodation and visual acuity) occur, reduce dose. If symptoms persist, patients should not operate machinery or drive. After meprobamate overdose, prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and hyperventilation are reported. Give cautiously and in small amounts to patients with suicidal tendencies. Treat attempted suicide (has resulted in coma, shock, vasomotor and respiratory collapse and anuria) with gastric lavage and appropriate symptomatic therapy (CNS stimulants and pressor amines as indicated). Two instances of accidental or intentional significant overdosage with ethoheptazine and aspirin have been reported. These were accompanied by CNS depression (drowsiness and lightheadedness) but resulted in uneventful recovery. On basis of pharmacologic data, CNS stimulation could be anticipated, with nausea, vomiting and salicylate intoxication (requires induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, and observation for hypoprothrombinemic hemorrhage [usually requires whole blood transfusions]).

Adverse Reactions: Ethoheptazine and aspirin may cause nausea with or without vomiting and epigastric distress in a small percentage of patients. Dizziness is rare at recommended dosage. Meprobamate may cause drowsiness, ataxia and rarely allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses. Such patients may have had no previous contact with meprobamate and may or may not have an allergic history. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. If allergic reaction occurs, discontinue meprobamate; do not reinstitute. Severe reactions, observed very rarely, include fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. These cases should be treated symptomatically including, when indicated, such medication as epinephrine, antihistamine and possibly hydrocortisone. A few cases of leukopenia, usually transient, have been reported on continuous use. Rarely, aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported, almost always in presence of known toxic agents.

Overdosage: See precautions section for management of overdosage.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

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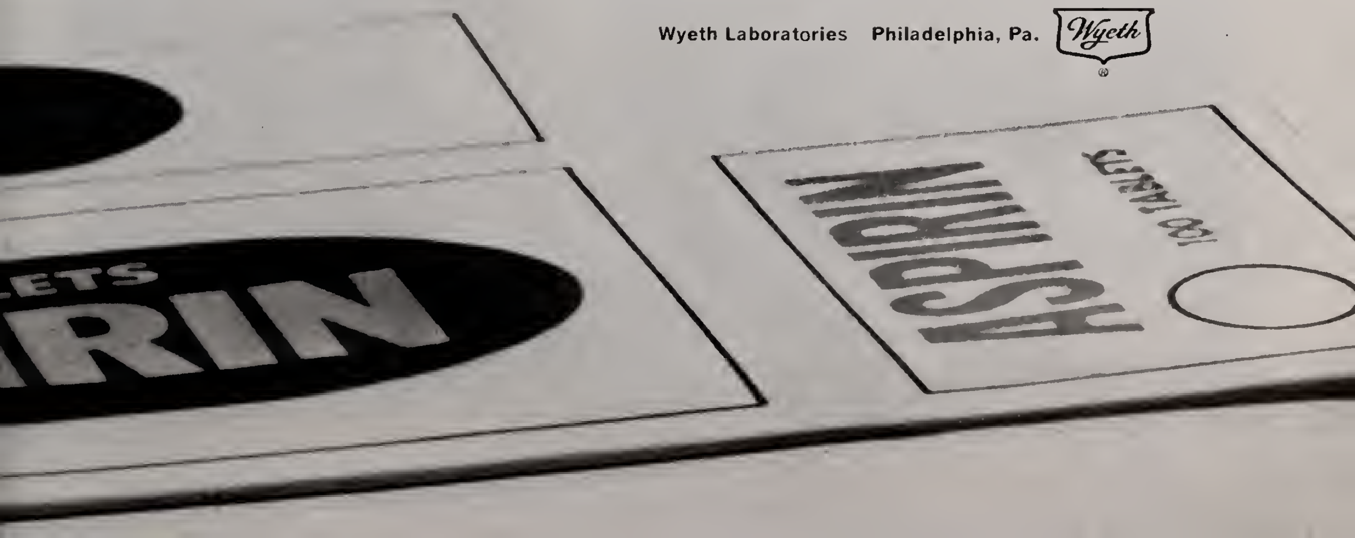

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MEDICAL ANNALS
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October 1969
VOLUME XXXVIII • NUMBER 10

Bedside Maneuvers to Augment the Murmur of Tricuspid Regurgitation

VITOLDS C. VITUMS, M.D.,* ALDEN S. GOOCH, M.D.,† AND JOHN M. EVANS, M.D., F.A.C.P.‡

In 1946 Rivero-Carvallo[1] reported that the intensity of the systolic murmur of tricuspid regurgitation is often increased immediately after a deep inspiration, whereas other systolic murmurs are unchanged or diminished (Carvallo sign). As a useful sign in the differential diagnosis of cardiac murmurs it has been generally but not unanimously accepted.[2, 3, 4] Undoubtedly there are many situations in which the Carvallo sign is either absent or is difficult to elicit. In this study additional bedside maneuvers were evaluated to determine whether or not the murmur of tricuspid regurgitation could be identified with greater accuracy.

Subjects and Methods

Thirty adult patients with heart disease and systolic murmurs localized to the lower left sternal or xiphoid areas were selected for study (table 1). All had clinical evidence of right-heart failure, and the murmurs were assumed to be due to tricuspid regurgitation. They had a variety of cardiac diagnoses; the most frequently encountered was primary myocardial disease.[5, 6] Tricuspid regurgitation was further suggested in 23 cases by prominent jugular venous regurgitant waves, and in 17 of these there was obliteration of the normal "x" descent. Venous liver pulsations were also evident in 15 patients.

The murmur of tricuspid regurgitation was evaluated by listening with a stethoscope (diaphragm) pressed on the chest and noting changes of its intensity as influenced by several maneuvers performed separately: (1) deep inspiration, (2) gentle compression by the palm of the examiner's hand beneath the right costal margin or the lower liver edge for approximately 5 seconds, (3) passive elevation of the patient's legs by an additional person, and (4) combinations of these maneuvers. Each patient was re-

TABLE 1: Etiologic Diagnosis of 30 Subjects with Tricuspid Regurgitation Murmurs

Case No.	Age and Sex	Diagnosis
1	60 M	Luetic aortic regurgitation with biventricular failure
2	62 M	Primary myocardial disease (PMD)
3	32 M	Bacterial endocarditis, tricuspid valve
4	49 F	Arteriosclerotic heart disease (ASHD)
5	57 M	PMD
6	37 M	Complete heart-block with biventricular failure
7	50 F	Rheumatic heart disease (RHD) with pulmonary hypertension
8	60 F	ASHD
9	47 M	RHD with pulmonary hypertension
10	38 M	Viral myocarditis, acute
11	52 M	PMD
12	36 M	Myocardial infarction
13	63 M	PMD
14	47 M	PMD
15	55 M	PMD
16	53 M	RHD with pulmonary hypertension
17	50 M	PMD
18	37 M	RHD with pulmonary hypertension
19	40 M	PMD
20	42 F	RHD with pulmonary hypertension
21	49 M	PMD
22	51 M	PMD
23	59 M	Pulmonary fibrosis with pulmonary hypertension
24	67 M	Pulmonary emphysema with pulmonary hypertension
25	57 M	ASHD
26	52 M	PMD
27	48 M	RHD
28	43 M	Papillary muscle dysfunction (RV)
29	54 M	PMD
30	55 M	PMD

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* Intern in Medicine, George Washington University Division, Veterans Administration Hospital, 50 Irving Street, N.W., Washington, D. C. 20010.

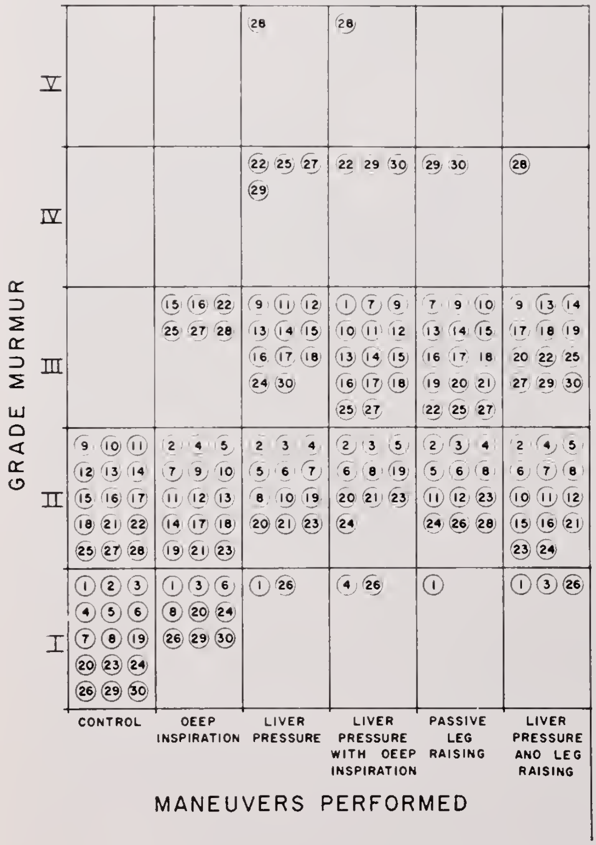
† Deborah Hospital, Browns Mills, N. J. 08015; formerly Assistant Professor of Medicine, George Washington University Medical Center.

‡ Professor of Medicine, George Washington University Medical Center, 901 23rd Street, N.W., Washington, D. C. 20037.

laxed and coöperative and lying supine during the examination. Each maneuver was repeated several times and auscultation performed by at least 2 examiners. Occasionally a few minutes of practice was needed to avoid unintentional breath-holding or Valsalva maneuvers. The murmurs were graded by the I to VI classification of Levine.[7, 8] Although the assignment of murmurs to specific intensity grades is somewhat subjective and is modified by the vagaries of examiner variations, definite changes could be recognized. External phonocardiograms were obtained in 13 of the subjects in order to document the effect of the various maneuvers on the loudness of the murmurs. Intracavitary phonocardiograms were obtained in 2 subjects to demonstrate changes in the murmurs, as recorded in the right atrium.

Results

The behavior of the murmur in each subject is summarized in figure 1. In no case did the maneuvers diminish the loudness of the murmur. A Carvallo sign could be elicited in 12 patients.



GRADE MURMUR	CONTROL	DEEP INSPIRATION	LIVER PRESSURE	LIVER PRESSURE WITH DEEP INSPIRATION	PASSIVE LEG RAISING	LIVER PRESSURE AND LEG RAISING
V			㉘	㉘		
IV			㉒ ㉕ ㉗ ㉙	㉒ ㉙ ㉚	㉙ ㉚	㉘
III		⑮ ⑯ ㉒ ㉕ ㉗ ㉘	⑨ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ㉔ ㉚	① ⑦ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ㉕ ㉗	⑦ ⑨ ⑩ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉕ ㉗	⑨ ⑬ ⑭ ⑰ ⑱ ⑲ ⑳ ㉒ ㉕ ㉗ ㉙ ㉚
II	⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ㉑ ㉒ ㉕ ㉗ ㉘	② ④ ⑤ ⑦ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑰ ⑱ ⑲ ㉑ ㉓	② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑩ ⑲ ⑳ ㉑ ㉓	② ③ ⑤ ⑥ ⑧ ⑲ ⑳ ㉑ ㉓ ㉔	② ③ ④ ⑤ ⑥ ⑧ ⑪ ⑫ ㉓ ㉔ ㉖ ㉘	② ④ ⑤ ⑥ ⑦ ⑧ ⑩ ⑪ ⑫ ⑮ ⑯ ㉑ ㉓ ㉔
I	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑲ ⑳ ㉓ ㉔ ㉖ ㉙ ㉚	① ③ ⑥ ⑧ ⑳ ㉔ ㉖ ㉙ ㉚	① ㉖	④ ㉖	①	① ③ ㉖

FIG. 1. Compilation of the changes in the loudness of the systolic murmurs. Each subject is represented by a circled number and the response to the various maneuvers is indicated. Each maneuver was performed separately.

The most effective method for increasing the murmurs was the application of liver pressure or leg raising, either with or without simultaneous deep inspiration. With these combinations of maneuvers the murmur was increased in all but 1 case. Of particular significance are the 18 cases in which the murmur was not augmented by deep inspiration (absent Carvallo sign) but was increased by the additional maneuvers of right upper quadrant pressure or passive leg raising. The combination of liver pressure with leg raising was less effective, augmenting the murmur in only 19 subjects. The lack of response in some of these may have been due to the impedance to inferior vena cava flow by the externally applied transhepatic pressure.

The intracavitary phonocardiograms demonstrated the changes in the systolic murmurs with the catheter tip in the right atrium. Inspiration, hepatic pressure, and leg raising could all augment the murmurs, and this varied somewhat in different locations within the right atrium. The murmur could not be recorded in the right ventricle or pulmonary artery. In 1 subject a large regurgitant V wave could also be elicited along with the increase of the murmur (figure 2).

In serial observations it was noted that 14 of the murmurs decreased and 3 later disappeared after therapy for congestive heart failure and did not reappear with any maneuver. Others remained unchanged, possibly reflecting a lack of beneficial response to treatment. One subject (no. 28) who demonstrated a marked increase in the intensity of the murmur was found at necropsy to have a right ventricular papillary muscle dysfunction.

Discussion

Since the original report[1] describing the increased loudness of tricuspid regurgitation murmurs with inspiration, many clinicians have often found this sign to be of value in the differential diagnosis of heart murmurs. Rivero-Carvallo[9] also found the sign to be unpredictable at times and attempted to reinforce the murmur by 3 to 6 deep breaths prior to sustained apnea. He designated this "the sign of the repeated maneuver." In some cases the murmurs became fainter and even disappeared after inspiration in spite of previously positive reinforcements. These auscultatory findings were confined to patients who were proven to have had a paper-thin right atrium (atrium papyraceum). Other investigators[10, 11] found difficulty demonstrating or augmenting low-grade tricuspid regurgitation murmurs, while others[2, 3, 4] found the sign of little or no value. Nakhjavan and co-workers[12] demonstrated an inspiration reduction of inferior vena cava flow in some patients with pulmonary emphysema. This may be the reason for the absence of a Carvallo sign in our case no. 24. Also, it is known that if a murmur does not increase on inspiration, tricuspid regurgitation cannot be excluded.[13] When inspiration fails to cause transient hemodynamic alterations to a degree which causes changes in the physical signs emanating from the right heart, the addition of liver squeezing or leg raising is recommended. The aim is to further augment systemic venous return and thereby exaggerate the flow differentials to the right and left heart chambers. Perhaps these maneuvers could also be of value in assessing tricuspid stenosis murmurs, right heart gallops, second heart-sound splitting, and pulmonary ejection sounds.

The value of bedside methods in differentiating the cause of pansystolic murmurs in cases of mitral stenosis has been noted, and the surgical implications have been emphasized.[14, 15, 16] Mitral stenosis can be a cause of functional tricuspid regurgitation, and these patients may incorrectly be considered to have mitral regurgitant lesions. Tricuspid regurgitation is also a common feature of cardiac failure of any etiology, and it may be abolished by reëstablished right ventricular compensation or by a decline of pulmonary hypertension.[17, 18]

Other methods can be used to demonstrate or reinforce the murmur of tricuspid regurgitation by various interventions such as indicator dilution curves,[19] the administration of amyl nitrite or phenylephrine,[20] platinum electrode techniques,[21] and intracardiac phonocardiography.[22] Although these methods may be very useful, they are interventions which engender some slight risk and cannot always be utilized as a feature of the bedside examination. Exercise may increase the murmur of tricuspid regurgitation,[16] but this is of little diagnostic value because exercise augments most cardiac murmurs, including that of mitral regurgitation.

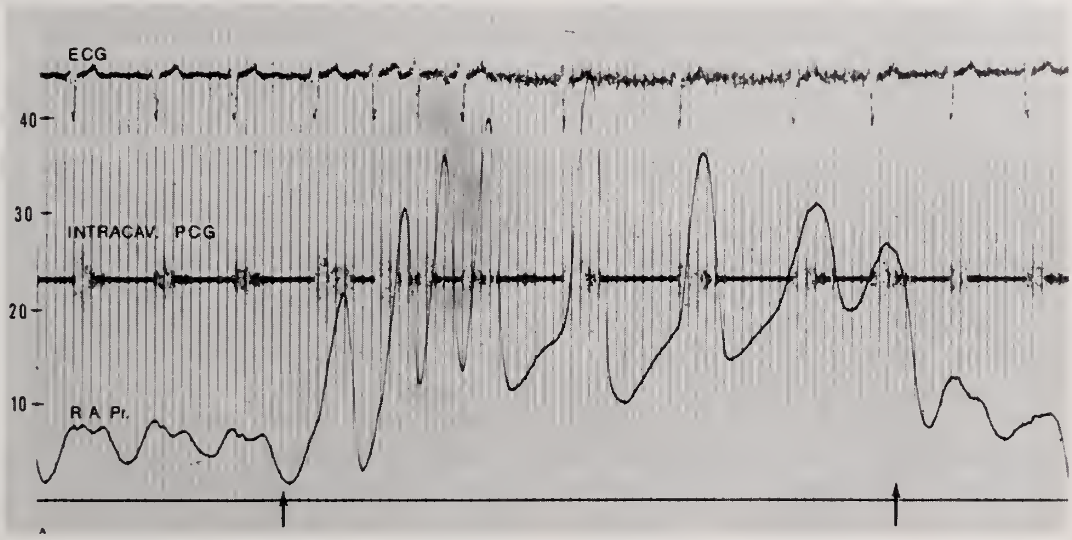


FIG. 2. In patient no. 8, a 60-year-old woman with ASHD and severe biventricular failure, a simultaneous intracavitary phonocardiogram and pressure were recorded in the mid-right atrium. Manual pressure was applied below the liver (between the arrows) at the time of inspiration. Large regurgitant V waves and an increase in the murmur can be seen. Tricuspid regurgitation begins with the fourth beat, and a transient arrhythmia begins with the fifth beat. Time lines, 0.10 sec.

Summary

Clinical maneuvers designed to transiently increase systemic venous return to the heart and thereby increase the intensity of the murmur of tricuspid regurgitation were studied in 30 patients and compared to the sensitivity of the Rivero-Carvallo sign. External pressure applied below the liver or passive leg raising, either with or without deep inspiration, can often augment the murmur when there is no response to deep inspiration alone. These simple bedside maneuvers are recommended as useful additions to the physical examination of the heart.

(*Continued on page 542*)

Planning for Improved Coronary Care

NORMAN S. SARACHEK, M.D.*

IN THE 7 YEARS since the first coronary care unit (CCU) began operation the concept of modern coronary care has been widely implemented. Since 1967 the number of hospitals with areas designed, equipped, and staffed for the treatment of acute myocardial infarction patients has risen from approximately 350[1] to an estimated 1,400.[2]

Coronary artery disease remains the Nation's leading cause of death, resulting in over 400,000 fatalities annually in the United States. It is imperative, therefore, that the medical community seek to improve coronary care services both within and outside of the hospital. There has been much discussion on the use of new drugs, defibrillators, and computors in the care of "heart-attack" patients. The following review will consider several less frequently recognized areas which present significant opportunities for community planning to improve coronary care.

Nurse Education

In 1966 a group of experienced coronary-care physicians and nurses prepared a set of criteria and guidelines for the development of coronary-care nurse-training centers.[3] Twelve centers are currently in their second year of operation. Key features of the courses at these centers include teaching of the basic sciences as they relate to coronary heart disease, minimum course duration of 4 weeks, and the use of supervised clinical experience as a major teaching method. The courses are being carefully evaluated by precourse and postcourse testing, and follow-up of nurse trainees after they return to their hospitals. When completed the evaluation should provide a better understanding of the type of course material which is most useful to the nurse, characteristics of the nurse who is likely to find satisfaction working in a CCU, and the most efficient method of teaching the required material. By mid-1969 approximately 2,300 nurses will have attended 12 centers supported by the Heart Disease and Stroke Control Program. The Regional Medical Program has funded over 15 coronary-care nurse-training courses, many designed to include the key features discussed above. However, the number of applicants for 4- to 6-week courses far exceeds the number of positions available. There is, therefore, a continuing need for more CCU nurse-training centers.

Evening and short-term courses lasting 1 to 3 days have also been organized and are operating successfully. It is important for the instructors of such short courses, as well as for students attending them, to realize that the goals cannot be the same as those for a 4- to 6-week full-time course. The curriculum must be limited to material which can be understood and remembered in a brief time. The learning of skills and development of sensitivity toward the patient and his problems must be done separately in a supervised clinical setting. Nevertheless, short courses serve a definite need by providing an introduction to coronary-care nursing and by serving as a method of continuing education. It is not feasible for every nurse from every CCU to attend a full-time course. Short courses, supplemented by continued teaching and clinical experience, allow hospitals to further develop their coronary-care nursing staffs.

Physician Education

Pharmacologic agents and complex instrumentation in common use today were virtually unheard of 7 years ago. The depth to which a physician must understand their use varies a great deal. All physicians will benefit from a knowledge of the principles of coronary care and should be familiar with the emergency treatment of cardiac arrest. Physicians who care for acute myocardial-infarction patients should be familiar with the specialized techniques of treatment and the operation of CCU equipment. Every unit should have available at least 1 physician who is able to care for the more critically ill patients. There are over 300,000 physicians in the United States today.[4] Approximately 70,000 of these are in general practice and over 60,000 devote themselves to internal medicine. Thus, more than 130,000 physicians are likely to involve themselves to some degree in the care of coronary patients. The remaining 170,000 physicians may be called on at a moment's notice to apply resuscitative procedures.

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* Department of Cardiology, Presbyterian-University Hospital, 230 Lothrop Street, Pittsburgh, Penna. 15213; formerly Assistant Chief, Control Section, Heart Disease and Stroke Control Program, Division of Chronic Disease Programs, Health Services and Mental Health Administration, Public Health Service, Department of Health, Education, and Welfare.

An acceptable, efficient method of making skills and knowledge available to physicians is necessary if the requirements for education are to be satisfied. Several suggestions were made at the National Conference on Coronary Care Units.[5] These included 2- to 3-week courses based on the same principles as the full-time nurse-training programs, courses of several days' duration limited to a particular subject, weekly continuing education programs, and intensified house-officer and student training. Whether physicians will be able to remove themselves from practice for a 2- or 3-week period to attend a CCU training course is not known. However, there has generally been an excellent response to 2- or 3-day courses on selected topics, many of which are sponsored by the American College of Cardiology and the American Heart Association.

Preceptorships lasting several months provide an excellent learning experience and should be encouraged. However, the number of physicians who would be able to attend and the number of centers offering preceptorships seem to preclude satisfying the national need with this type of training.

Non-CCU Hospital Programs

Emergency room care. Introduction of coronary care should result in an examination of the entire in-hospital system for handling the acute coronary suspect. A reëvaluation of emergency room policies should be undertaken to assure immediate identification, examination, and treatment of coronary suspects. Transportation of the patient from the emergency room to the coronary care unit should be made as rapid and comfortable as possible.

Cardiopulmonary resuscitation teams. Activities of the coronary care unit frequently arouse a great deal of enthusiasm throughout the hospital. This can be used to advantage for the organization of a cardiopulmonary resuscitation team. The team should be drilled to assure rapid response to emergencies. Methods of calling it into action and delivering appropriate equipment should be carefully worked out, practiced, and known to all members of the hospital staff.

Cardiopulmonary resuscitation training. The coronary care unit can provide an ideal focus for generating interest in a hospital-wide cardiopulmonary resuscitation training program for the entire staff. An on-going effort to train new personnel and to retrain all personnel should be an integral part of this program. A recent publication by the Committee on Cardiopulmonary Resuscitation of the American Heart Association stated that "a retraining schedule that includes manikin practice at least once yearly is the minimum schedule recommended to maintain competence."[6]

Out-of-hospital Planning

It has been estimated that over one-half of the 400,000 annual coronary artery disease deaths are sudden and occur outside of the hospital.[7] If these persons had received the benefits of modern coronary care it is quite possible that many would have been saved. How can the patient be induced to avail himself of medical help at the first sign of suggestive heart attack symptoms? A recent conference, "Early Care for the Acute Coronary Suspect," co-sponsored by the Heart Disease and Stroke Control Program, the American College of Cardiology, and the American Heart Association, considered varied approaches to this question.[8] The multidisciplinary group of experts assembled for this conference agreed that more knowledge is needed of the factors which induce or impede a patient with symptoms suggestive of an acute heart attack to seek medical aid. We know relatively little about how a symptomatic individual makes the decision to seek aid or about what factors influence that decision. An understanding of the relative importance of these factors and a complete definition of the patient's care-seeking process await further study and may provide the basis for future programs to assure earlier care of the coronary suspect.

Kuller et al[7] have presented evidence that many sudden death victims have been to a physician within a week of death. It is evident, therefore, that the medical profession must seek to respond to calls for aid rapidly and effectively. One way of accomplishing this is by mobile coronary care.[9, 10] The delivery of modern coronary care to the patient at the site of attack will allow stabilization of his condition and electrocardiographic monitoring during transfer to the hospital. Mobile CCU's designed to accomplish this must be staffed by well-qualified personnel and equipped with appropriate emergency drugs and with portable defibrillators, monitors, and electrocardiogram machines. Due to the probable high cost of such a unit the effectiveness of currently operating projects must be carefully evaluated before their use can be generally recommended. Several demonstration projects are in operation to test the concept of mobile coronary care.

The employment of specially trained nurses or paramedical personnel on mobile units in place of physicians may make providing of on-site coronary care more practicable. The function of such personnel may be best directed by means of radiotelemetry of the patient's electrocardiogram and voice-radio communication between unit personnel and a physician in the hospital, office, or home. Techniques for establishing communication networks are being perfected. Nagel et al[11] have reported the successful transmission of electrocardiograms from emergency rescue vehicles manned by municipal firemen to a hospital data center.

Many of the factors which may influence a person's decision to seek medical aid concern his knowledge and beliefs about the symptoms and prognosis of an acute heart attack. It is not known to what degree educational programs can alter the behavior of a person experiencing symptoms suggestive of a heart attack. Therefore, the role of lay and professional education programs in achieving earlier care for the coronary suspect must be examined. The recent conference on early care recommended that the public be presented with an honest, well-balanced picture of the symptoms, immediate prognosis, and long-term significance of an acute heart attack in an attempt to reduce denial of symptoms and encourage seeking of care.[8]

Summary

Interest in coronary care has continued to grow, as evident in the increasing number of coronary care units. Nevertheless, because of the continuing high death rate from coronary artery disease further improvements in the system of coronary care must be made.

Although there have been many programs organized to educate nurses for CCU duty, more opportunities for nurse and physician education are needed. It is expected that information on the type of material to be taught to CCU nurses and the most efficient method of teaching it will soon be available.

Coincident with the introduction of coronary care, the hospital should examine emergency-room handling of acute coronary suspects and should establish cardiopulmonary resuscitation training programs and teams.

There is an urgent need to extend the benefits of coronary care to persons dying suddenly outside of hospitals. Techniques being examined include mobile coronary care units, radiotelemetry of electrocardiograms, and education of the public concerning the symptoms and prognosis of an acute heart attack.

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The Relation of Potassium Therapy to Small-bowel Lesions*†

GLADYS ROSENSTEIN, M.D., AND E. DE VAUGHN BELTON, M.D.

In March 1967 the United States Food and Drug Administration (FDA) sent a letter to all physicians concerning the association of small-bowel ulcerations and stenosis with the use of enteric-coated tablets containing potassium chloride, either alone or combined with thiazide diuretics. Two years previously a warning statement concerning these adverse reactions had been added to the labeling of all such drugs. In spite of this warning, more cases had been reported to the FDA, prompting the alerting letter. This letter requested physicians to report adverse reactions associated with this combination of drugs. Data received from physicians, drug companies, and the FDA's hospital-reporting programs were reviewed, and from this material 122 case reports were analyzed for the present study. These were selected because of a close correlation between the potassium-containing drug and the intestinal lesion.

Not included in the series were 8 cases in which special circumstances made drug relation appear unlikely. Among them were 4 in which the pathologic diagnosis was regional enteritis, 1 with bowel obstruction attributed to adhesions following appendectomy, 1 with ileal stricture presumably due to thrombotic episodes related to sickle-cell anemia, and 2 with lesions of undetermined origin. Perhaps, with present knowledge, all these lesions might be considered drug-related.

In September 1964 Lindholmer et al[1] of Sweden reported 20 cases of small-bowel ulcers with stenosis following the use of a thiazide diuretic and concomitant potassium chloride. In November 1964 Baker et al[2] of Minneapolis analyzed 12 more such cases. Since then numerous clinicians have added to the growing list of reports.

Type of Ulcer

The typical lesion attributed to potassium therapy is a single, well-demarcated circumferential ulcer located in the middle to distal jejunum or ileum. The mucosa shows edema and inflammatory changes with fibrosis, thickening, and contracture.[2-7] There may be eosinophilic infiltration.[8] Perforation may occur with resultant peritonitis. Occasionally, a small perforation may seal itself off without the need for surgical intervention. These ulcers resemble those of nonspecific small-bowel ulceration[2, 3] and may result in complete or partial obstruction. Watson and Mark,[9] in their 4-year clinical review (1962 to 1965) of hospital data, and other investigators[2, 3] have noted that the small intestinal lesions resemble gastric or duodenal peptic ulceration. There may be a lesion in more than one area.[2, 4] If the obstruction is minimal (more spastic than fibrotic), the symptoms may disappear when the potassium therapy is discontinued.

Etiology

Diuretics combined with potassium chloride are most frequently used in patients with cardiovascular disease (hypertension and edema associated with congestive heart failure). Therefore, it has been suggested that the lesions may be produced because of the vascular abnormalities. Watson and Mark[9] showed that if 5 to 7.5 cm. of the small intestine of dogs were made ischemic, changes similar to those of the potassium lesions could be produced. If larger areas were made ischemic, hemorrhagic infarcts resulted. Boley et al[5] demonstrated that intestinal vascular disease makes an individual more susceptible to ulceration.

In young people without vascular abnormalities this drug combination has been prescribed for premenstrual tension and obesity; occasionally these patients have developed ulcers and stenosis of the small intestine.

The enteric coating has been suggested as an irritant, but no ill effects have been seen with other enteric-coated medicinals. In the monkeys studied by Lawrason et al,[10] the enteric-coated placebo did not produce any ulceration. Diener et al[11] also produced the ulcer experimentally in the monkey with enteric-coated potassium chloride, either alone or combined with thiazide diuretic. However, the enteric-coated placebo produced no lesion.

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* From the Bureau of Medicine, Food and Drug Administration, Department of Health, Education, and Welfare, Washington, D. C. 20204.

† Reprint requests to Dr. Rosenstein.

Several theories have been advanced to explain the formation of the ulcer and stenosis. When the tablet containing potassium is enteric-coated, the potassium is released in high concentration into a small segment of the small intestine. Since the bowel mucosa is under constant irritation, ulceration and muscular spasm may result (taking into consideration individual sensitivities and resistances). Diener et al[11] in their study in monkeys noted that ulceration occurred at the site where most of the potassium was released from the enteric-coated tablet. Payan and Blaustein[12] found that an 81-year-old woman who died after intestinal perforation had a partially disintegrated enteric-coated potassium chloride tablet within a jejunal ulcer. Baker et al[2] in 1 of their 12 cases, also found an almost intact tablet at the site of an ileal perforation. Hartman et al[13] reported a mid-ileal stenosis with 2 circumferential ulcers in a 2-year-old child 20 days after the accidental ingestion of 37 tablets which contained a combination of hydrochlorothiazide and reserpine with an enteric-coated core of potassium chloride. This occurred in spite of gastric lavage soon after ingestion.

Boley et al[5, 6] and Allen et al[7] suggest that local mucosal irritation is not the main etiologic factor, but rather that the ulcers are caused by "venous infarction." The enteric-coated tablet releases a high concentration (in a localized area) of potassium which is absorbed by the veins, causing "venous spasm or paralysis, submucosal edema"[5] with infarction and ulceration, and eventually possible obstruction. Hentzer and Persson[14] tested stools for occult blood in 71 elderly patients who were given bendroflumethiazide either alone or with an enteric-coated potassium chloride core. The potassium core was of 2 types—a regular core with rapid release of potassium or a sustained release core. These authors found less occult blood in patients given the sustained release form, possibly because the potassium was released gradually rather than suddenly in 1 area in high concentration.

Myers et al,[15] at the time of resection of the small or large bowel for malignancy, injected intraluminally either hypertonic sodium chloride, hypertonic potassium chloride, or isotonic sodium chloride. They found that both the hypertonic solutions produced bowel-wall changes, especially mucosal, similar to that of nonspecific small-bowel ulcerations. Changes in the surrounding vascular walls suggested that the drug was possibly "absorbed." There was also surrounding nerve damage. They suggest the possibility of either a direct "toxic" effect of the potassium itself or the hypertonic solution.[15]

Clinical Data

The 122 cases reviewed here are divided into 3 classifications (table 1): 112 patients were treated with an oral diuretic and potassium combined in an enteric-coated tablet; 6 were treated with a diuretic and enteric-coated potassium given separately; and in 4 only an oral diuretic was used without any supplemental potassium.

TABLE 1: Drugs Involved in Small-bowel Ulceration and Obstruction

Drugs	No. Cases Reviewed
Thiazides and potassium combined in enteric-coated tablet	112
Oral diuretic drug and enteric-coated potassium given separately	6
Oral diuretic drug without potassium	4
TOTAL	122

Table 2 shows the distribution as to age, sex, and race. The lesion appeared more frequently in those 60 years old and over, in women, and in the Caucasian race.

TABLE 2: Lesions of Small Bowel in Relation to Age, Sex and Race

	No. Cases
Age:	
Under 40	7
40–49	22
50–59	27
60 and over	50
Unknown	16
Sex:	
Women	72
Men	45
Unknown	5
Race:	
Caucasian	66*
Negro	12
Unknown	44

* Includes 1 Puerto Rican.

Table 3 illustrates the nature and location of the lesion as determined by roentgenograms, surgical exploration, or postmortem examination. The most frequent site was the ileum.

TABLE 3: Location and Nature of Small-bowel Lesions

	No. Cases
Location:	
Single lesion	
Jejunum	22
Ileum	54
Small bowel (location not reported)	30
Multiple lesions	
Jejunum	1
Ileum	3
Jejunum and ileum	8
Small and large bowel	2
Small bowel (location not reported)	2
Nature of lesion:	
Single lesion	
Ulcer—uncomplicated	8
Stenosis	20
Ulcer with stenosis	34
Ulcer with perforation	28
Ulcer with perforation and stenosis	6
Unspecified small-bowel lesion	10
Multiple lesions	
Ulcer—uncomplicated	2
Stenosis	5
Ulcer with stenosis	4
Ulcer with perforation	2
Ulcer with perforation and stenosis	2
Stenosis with inflammation only at a second site	1

Discussion

Most of the 122 patients reviewed received concomitant medication such as digitalis, thyroid, oral antidiabetic agents, or sedatives, none of which individually have ever been associated with small-bowel lesions.

The lesions appeared more frequently in people aged 60 and over, in women, and in the ileum in the form of ulceration with stenosis and/or perforation or stenosis alone.

Surgical treatment was required by 110 patients, and 8 were treated medically. The type of treatment given 4 patients was not specified.

Seven patients received the drug for obesity and 2 for premenstrual disorders. The others received the drug for cardiovascular disease or the reason for use was not specified.

Four patients who were on the oral diuretic alone without potassium developed a small-bowel lesion.

Sixteen patients developed multiple lesions (7 women and 9 men). Eight patients had lesions in both the jejunum and ileum, 3 had multiple ileal lesions, 1 had multiple jejunal lesions, 2 had lesions in both the large and small bowel, and 2 had small bowel lesions with the site not given.

One patient was under the age of 40, 4 were in the 40–49 age group, 3 were in the 50–59 age group, 7 were over the age of 60, and the age of 1 was not specified.

Death occurred in 9 cases (7 men and 2 women). Three were in the 50–59 age group, 5 were 60 years of age or over, and in 1 the age was not reported.

Summary

The United States Food and Drug Administration, in response to a letter sent to physicians on March 15, 1967, received many case reports of small-bowel lesions produced by enteric-coated potassium chloride, either given alone or combined with an oral diuretic. Of these reports, 122 were analyzed (72 women, 45 men, and 5 with sex not reported). Seventy-seven patients were over age 50; of these, 50 were over 60. The lesion appeared predominantly in the ileum; the second most frequent location was in the jejunum. Sixteen patients (7 over the age of 60) had multiple lesions.

It is now well established that enteric-coated potassium chloride, either alone or combined with oral diuretics, can produce small-bowel ulcers, stenosis, and/or perforation. Whatever the mechanism, the use of enteric-coated potassium drugs is potentially dangerous. Potassium replacement should be provided with caution. At the 1968 Annual Meeting of the American Medical Association a panel symposium on diuretics revealed disagreement among the panel members regarding potassium therapy for long-term use.[16]

An editorial in *The New England Journal of Medicine*[17] summarizes current thinking: "The physician should see that the diet is rich in potassium-containing foods and should prescribe potassium only in the presence of a specific need; when it is indicated, he should consider dispensing it separately in liquid form or in uncoated tablets with food."

Conclusions

Serious toxicity manifested by small-bowel ulceration and stenosis has been reported with the use of enteric-coated potassium chloride preparations.

Potassium loss is variable, and the amount of potassium required to prevent hypokalemia varies with the individual patient. Drug products containing fixed ratios of potassium salts to diuretic cannot be relied upon in every case to provide prophylaxis.

Dietary potassium supplementation is the prophylactic method of choice in thiazide diuresis. If additional supplementation is necessary, first consideration should be given to preparations other than coated tablets of potassium salts. These should be used with careful consideration of labeling directions.

N. B. Dr. Jule K. Lamar, pharmacologist, Mr. Arthur E. Auer and Mr. Rudolph Apodaca, of the Food and Drug Offices, and Mr. John R. Short, pharmacist, aided in collecting and tabulating the data.

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Cardioversion*

BERNARD LOWN, M.D.†

It is now 6 years since the introduction of cardioversion as a method for terminating arrhythmias. To date many thousands of patients have been successfully treated. This extensive experience provides an adequate basis for assessing the advantages and limitations of cardioversion. Ectopic tachycardias in the past have been controlled by means of drugs. The use of anti-arrhythmic agents, however, presents a number of limitations. To reach an effective dose requires a time-consuming biologic titration involving frequent if not continuous monitoring of patients. However, whatever the precautions, serious side-effects frequently occur. Furthermore, all anti-arrhythmic drugs when given rapidly or in large doses or when administered intravenously depress myocardial contractility and reduce peripheral resistance. This may prove especially dangerous in the presence of an arrhythmia which already has compromised cardiac reserve.

Method and Rationale

The majority of human tachyarrhythmias are self-sustaining by virtue of recirculation of an excitable stimulus over a fixed or variable pathway. When the pathway is blocked, the ectopic mechanism is extinguished, and the sinus node resumes its usual role as the dominant pacemaker. Such block can be induced by an electrical pulse which depolarizes the entire heart and thereby abolishes momentarily all excitable activity. The hazard of electrical shock, namely, cardiac asystole and ventricular fibrillation, can be prevented by the use of brief direct current (DC) pulses and by discharging these pulses into a safe part of the cardiac cycle. The dangerous part of the cycle is the vulnerable period occurring at the time of inscription of the apex of the T wave. Electrical energy triggered into the heart during the vulnerable period results in ventricular fibrillation. Transthoracic DC shocks synchronized to discharge outside the T wave are both effective and safe for terminating a diversity of arrhythmias.

The Technique of Cardioversion

Since the most common disorder treated with cardioversion is chronic atrial fibrillation, the steps to be described apply especially to this arrhythmia. However, the same procedure with but slight modification is applicable to other ectopic mechanisms. In the case of elective reversion the patient is started 1 to 2 days before the procedure on maintenance quinidine therapy in a dose of 0.3 Gm. (5 gr.) 6-hourly. The objective of administering quinidine is 4-fold: (1) to develop adequate serum and tissue levels in order to prevent prompt recurrence of the arrhythmia, (2) to determine whether quinidine is well tolerated, (3) to obtain a small dividend of reversions observed in about 10 per cent of patients with chronic atrial fibrillation while on maintenance quinidine therapy, and (4) to diminish the incidence of ectopic mechanisms immediately following cardioversion. One hour before the procedure 0.1 Gm. of pentobarbital sodium (Nembutal®) is given orally. Transient amnesia is achieved by the use of diazepam (Valium®) given in a dose of 2.5 mg. intravenously and repeated at 2-minute intervals until mild anesthesia develops. This drug is well tolerated, and generally about 10 to 15 mg. suffices for the desired effect. The 2 electrode paddles are coated with liberal layers of conductive paste and applied in a front-back orientation. The anterior paddle is held with pressure on the mid-sternum while the patient lies on the posterior paddle which is located in the left infrascapular region.

Perhaps the most important aspect of the procedure is to begin with low-energy settings of 1 to 5 watt seconds (WS) and then proceed with higher energies such as 25, 50, 100, 200, 300, up to 400 WS. The practice of energy titration protects against serious complicating arrhythmias. For example, if electric shock provokes ectopic beats at low energies before reversion is achieved, one has the option of postponing the procedure or else administering lidocaine in a bolus of 50 mg. intravenously. If such titration is carried out it is not necessary to discontinue digitalis drugs prior to cardioversion. The reversion itself takes but a fraction of a second, and the patient is usually awake within a few minutes. When a normal mechanism is restored the blood pressure generally rises. There is no need to monitor the patient for a period longer than 1 hour if the procedure is uncomplicated.

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† Medical Clinics of Peter Bent Brigham Hospital; Cardiovascular Laboratories, Department of Nutrition, Harvard School of Public Health; office: 416 Marlborough Street, Boston, Mass. 02115.

Selection of Patients

How are patients to be selected for cardioversion? Two questions need to be answered: (1) Is the arrhythmia susceptible to electrical reversion? and (2) Will a normal mechanism be maintained for a sufficiently long time? Cardioversion has no place in the treatment of brief paroxysmal arrhythmias, recurring ectopic beats, or deranged atrioventricular or intraventricular conduction. It is without effect when the mechanism is sinus tachycardia or a reflex physiologic acceleration of the normal pacemaker which does not yield to anti-arrhythmic measures. Digitalis-induced rhythm disorders similarly are impervious to cardioversion. Furthermore, in the presence of digitalis toxic arrhythmias, more serious and even fatal disorders of the heart beat may result.

A number of patients are poor candidates for cardioversion because, though sinus rhythm can be established, it cannot be maintained. When quinidine is not tolerated and adverse reactions follow procaine amide, a normal rhythm will not persist. Patients with rheumatic heart disease who have been in continuous atrial fibrillation for more than 2 years or those with advanced degrees of mitral regurgitation who display a giant left atrium are unlikely to remain in sinus rhythm long enough to justify cardioversion. The elderly asymptomatic patient with coronary-artery disease and atrial fibrillation who exhibits a slow ventricular rate prior to digitalization is an unsuitable subject. Patients who have recurrent paroxysms of diverse atrial arrhythmias should not be reverted once they develop atrial fibrillation. They are less symptomatic with atrial fibrillation than when in sinus rhythm punctuated by frequent paroxysms of tachycardia. Patients should not be reverted before, during, or immediately after valvular operations. It is preferable to wait for 10 or more days after surgery, since sinus rhythm is then more likely to be long-lasting.

Overall Results

To date at the Peter Bent Brigham Hospital 900 patients have been reverted by means of cardioversion. Chronic atrial fibrillation accounted for 650 of these episodes; 150 had atrial flutter, and the remaining 100 had either ventricular tachycardia or varying supraventricular mechanisms. The overall success rate was 95 per cent. These results are the more impressive since the arrhythmia in many of these patients had proved refractory to large doses of antiarrhythmic drugs. More than 2,000 electrical shocks were employed, but there was not a single episode of prolonged cardiac asystole and only 1 episode of ventricular fibrillation due to a failure to synchronize the shock. Although many of the patients were in critical condition and a number had sustained acute myocardial infarction and were in far-advanced stages of congestive heart failure, none died as a result of cardioversion. Serious immediate complications were limited to 10 episodes of ventricular tachycardia. These were of brief duration and readily controlled. Eight of the patients suffered systemic thromboembolic complications within 1 to 8 days following cardioversion.

Specific Rhythm Disorders

Atrial fibrillation is the most common chronic disorder of the heart beat. One is no longer justified in using quinidine for reversion of this disorder. With quinidine, even when given in large doses, only 50 per cent of patients are restored to sinus rhythm; however, 30 per cent experience significant toxic reactions, and 1 to 2 per cent may die from the drug. With cardioversion, atrial fibrillation can be terminated in more than 90 per cent with an incidence of complications not exceeding 1 per cent.

Immediately after the cardioversion discharge there may be transitional mechanisms consisting of nodal rhythm, a shifting pacemaker, and ectopic atrial beats. These are observed in about 50 per cent of patients and continue for 30 to 60 seconds until the sinus node "warms up." With restoration of sinus rhythm the ventricular rate is slowed. The PR interval is generally full, and not infrequently first-degree heart block is present. The overall hemodynamic state is improved with a rise in cardiac output by about 30 per cent. The most salutary effects are observed in patients who are afflicted with mitral and aortic valvular insufficiency. Maintenance quinidine therapy has to be continued in an adequate dose of at least 1.2 Gm. daily, which results in blood level of about 3 mg. per liter. Even with this dose of quinidine, atrial fibrillation will recur within 6 months in 50 per cent of patients.

Atrial flutter is best treated with cardioversion. It is the easiest disorder to terminate electrically. The arrhythmia generally responds to a single low-energy shock of as little as 1 to 5 WS. No serious complications have been encountered.

Supraventricular tachycardias often present complex diagnostic and therapeutic problems. Frequently it is difficult to define the mechanism precisely whether it is of atrial or nodal origin. More important is to determine whether digitalis glycosides are responsible for the disordered rhythm. If the arrhythmia is due to digitalis intoxication, electrical shock may provoke lethal disorders of the heart beat. When, however, small energies are employed and lidocaine is used to abolish ventricular ectopic beats, the supraventricular arrhythmias can be safely treated with cardioversion. The success rate, however, is only 70 per cent.

Ventricular tachycardia responds well to anti-arrhythmic drugs such as procaine amide and lidocaine, and these constitute the preferred therapy. When the arrhythmia, however, is accompanied by significant hypotension, the patient is in pulmonary edema, or the tachycardia has developed in the wake of acute myocardial infarction and does not yield immediately to a bolus injection of lidocaine, cardioversion should be employed promptly.

Complications

The major complication following cardioversion of chronic atrial fibrillation is systemic or pulmonary embolism. This occurs in 1 per cent of patients who have not received anticoagulant drugs. If the reversion is elective and the underlying disease is rheumatic valvular disease, pretreatment with anticoagulants for 2 to 3 weeks is indicated. Aside from thromboembolism, atrial and ventricular arrhythmias may complicate the cardioversion procedure. The atrial mechanisms generally are of 3 types: (1) delayed warm-up of the sinus node manifested by sinus bradycardia, nodal rhythm or escape beats—the so-called "somnolent sinus-node syndrome," (2) increased atrial automaticity demonstrated by single or multiple atrial premature beats at times associated with brief salvos of tachycardia, and (3) "sick sinus-node syndrome," a defect in the elaboration or conduction of the sinus impulse characterized by chaotic atrial activity and usually followed by prompt reëstablishment of atrial fibrillation.

The ventricular arrhythmias complicating cardioversion are less common but more threatening than the atrial disorders. These are of 2 types: ventricular fibrillation, which occurs immediately after delivery of the shock and is usually the result of improper synchronization, and bigeminy or multifocal ventricular ectopic beats which may result in ventricular tachycardia or rarely in ventricular fibrillation occurring after several beats or a few minutes. These arrhythmias are generally associated with excessive digitalis. Lidocaine, in 1 or more injections of 50 mg. intravenously, is promptly effective.

Conclusions

The method of cardioversion is simple and direct. The physician can observe the entire process of reversion. It does not require a great investment of physician or patient time and is applicable to diverse arrhythmias. Differentiation between ectopic disorders, essential in the use of drugs, ceases to be a critical requisite for effective therapy.

Cardioversion is not accompanied by significant occurrence of serious complications. There is no depression of contractility, conductivity, or excitability of the heart, a common sequel after large doses of anti-arrhythmic drugs. The method of cardioversion can be readily mastered by the general physician.

Dr. James H. Blake

Third Mayor of Washington, D.C.

KEITH M. LINDGREN, M.D.*

Dr. James H. Blake, a practicing Washington physician (figure 1), played a prominent political role in the stormy early years of the Nation's Capital. He led the struggle to make the mayor an elective office in the District of Columbia, and after Congress granted this request Dr. Blake himself was elected Washington's third Mayor. He was responsible for stirring the feeble civilian efforts at self-protection when the British invaded and burned the young Capital in 1814, and he also presided over the City during its reconstruction.

James Heighe Blake was born in 1768 in Calvert County, Maryland, and grew up in a family of Maryland planters. In the late 1780's he chose to study medicine under Dr. William Shippen, who was the pioneer professor of anatomy and surgery at both the University of Pennsylvania and the College of Philadelphia. However, the young Blake did not receive an official degree from either institution. In 1789 he received a diploma signed by Dr. Shippen in the name of an ephemeral American Medical Society.[1]

Dr. Blake began his practice in the small port of Georgetown a year before the adjacent "ten miles square" was specified as a Federal district. Six years later he moved across and down the Potomac to Colchester, Virginia, where he developed political aspirations and was elected to serve in the State legislature from 1806 to 1808. Unfortunately, he found that a medical practice in the small Virginia town was insufficient to support a growing family, and armed with political letters of introduction to the newly elected President and "fellow Virginian," James Madison, Dr. Blake again crossed the Potomac and resumed the practice of medicine in the District of Columbia.

Politics continued to interest Dr. Blake, and in 1810 he was elected to the City Council of the District of Columbia. Washington had been initially governed by an appointed mayor. Dr. Blake advocated making the Federal City's mayor an elective office,† and he presided over the citizens' meeting which urged such action from Congress. Subsequently, a Congressional amendment to the City's charter in 1812 provided for election of a mayor by the City Council.

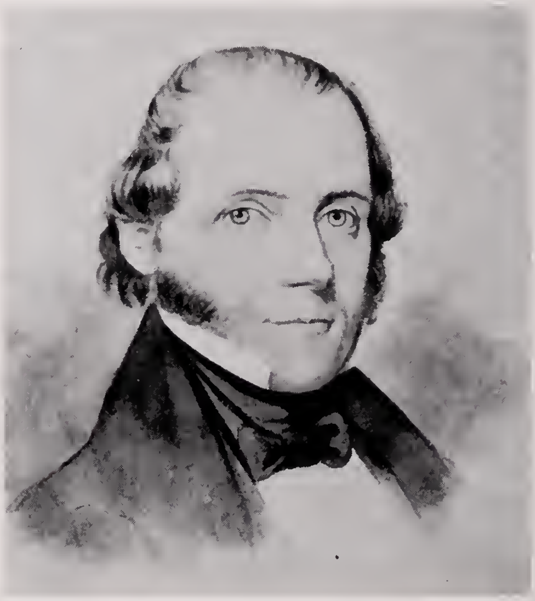

FIG. 1. Portrait of Dr. James Heighe Blake, third Mayor of Washington; reproduced by permission of The Columbia Historical Society, Washington, D. C.

In 1813 the election for Washington's mayor ended in a tie vote. Dr. Blake's name was substituted for one of the candidates in hope of breaking the deadlock. However, the new ballot also resulted in a tie, and the vote was settled by the curious political recourse of "drawing lots," which Dr. Blake won.[2] The physician-mayor took office in the midst of the War of 1812. He was well aware of the "temptation accorded in our metropolis"[3] to an enemy which held undisputed naval control of nearby Chesapeake Bay and

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* Fellow in Cardiology, Georgetown University Hospital, 3800 Reservoir Road, N.W., Washington, D. C. 20007.

† The same issue exists today. In 1871 Congress withdrew the right to elect a mayor and substituted appointed Commissioners. Recently a mayoralty has been revived, but it remains appointed by the President.

the mouth of the Potomac River. Plans for the defense of the Capital were slow-moving and depended primarily upon untrained, poorly led local militia drawn from the City's 9,000 inhabitants. When the British sailed up the Patuxent River and landed 4,000 troops 40 miles southeast of the Capital, the militia fell under Federal command and was marched into the field, leaving the District of Columbia defenseless. Dr. Blake called for the help of every citizen "able to carry a musket" in order to patrol the city itself.

The American forces chose to stand and fight at Bladensburg, a small crossroads 10 miles northeast of the Capital. Dr. Blake again summoned volunteers to aid at the site of battle.

> "On Monday and Tuesday preceding the battle, by considerable exertion, I procured about two hundred hands to work at Bladensburg, forming breastworks, etc., according to the wish of the commanding General as communicated to me. On the night preceding the battle I visited our camp at midnight, as many of the officers can testify, and was up the whole night. On the day of the battle I was on the field in the midst of danger—not as a spectator, but a volunteer in the line of my profession."[3]

With the rout of American forces at Bladensburg Dr. Blake returned to the Capital and warned Mrs. Madison of the danger of remaining in the White House.[4] Meanwhile, Dr. Blake's family had fled into Virginia. The Mayor left his defenseless city, and the victorious British entered the Capital unmolested. The British proceeded to burn all of the Federal buildings with the exception of the Patent Office; the latter was brazenly defended by another "doctor afield" in the Federal City, Dr. William Thornton, the designer of the Capitol building. Subsequently, Dr. Thornton engaged Dr. Blake in a newspaper polemic over the Mayor's abandonment of public office in the face of danger. Mayor Blake aptly defended his actions and quieted the issue by recounting his efforts at Bladensburg.

The British evacuated Washington after one day of plunder. Learning of their departure, Dr. Blake returned from Virginia and patrolled the city through the night with his musket. Fewer than one-tenth of the city's population remained. The Mayor immediately wrote to President Madison regarding the quiet state of the Capital, but neither horse nor rider was available to carry the message.[5] When the President returned he appointed Dr. Blake as medical supervisor of the hospital established in the Capital for sick and wounded soldiers.

Dr. Blake was annually reëlected Mayor of Washington while the City was being rebuilt. In 1818, presumably because of illness, he declined to run again for office. During his tenure he relinquished a salary as mayor, but he did derive significant income as a Collector of Internal Revenue for the District of Columbia from 1813 to 1819. He continued to maintain an extensive medical practice, and in 1817 he met with 15 other practitioners from Washington to organize the Medical Society of the District of Columbia. Dr. Blake was one of the 7 selected to draft its constitution, and he served as one of its initial vice presidents.

When President Madison left office in 1817 Dr. Blake was appointed by a general meeting of the citizens of the District of Columbia to write a letter expressing their appreciation of Madison's presidency. Dr. Blake's tribute recalled the "firmness and wisdom" required "when our City felt the tempest of war."[6] A similar tribute could be applied to Dr. Blake, who died 2 years later at the age of 52. An early champion of its citizens, Dr. Blake had endured the humility of Washington's capture, and through the continued support of its populace "extracted the elements of its stability and expansion" from the ruins of the Capital.

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Phenformin and Lactic Acidosis

Report of a Case and Review of the Literature

PHILIP B. OLIVA, M.D.*

The association of lactic acidosis with phenformin therapy has been cited a number of times since 1962.[1-12] However, in most of these cases clinical shock[1, 2, 3, 5, 6, 10, 11, 12] or some other cause of tissue hypoxia[4, 5, 7, 8] was present at the time the acidosis was first recognized, thus casting doubt on a direct causal role of phenformin. This led Williams[13] to conclude that the "evidence thus far tends to indicate that this compound per se has never produced lactic acidosis." The purpose of this report is to describe the occurrence of severe lactic acidosis in a phenformin-treated patient who had no evidence of clinical shock or any other known cause of lactic-acid overproduction and to review the current information bearing on the relationship of phenformin to lactic acidosis.

Report of Case

The patient was a 63-year-old Negro woman with a 10-year history of diabetes. She was treated by her private physician with protamine-zinc insulin until 6 months before admission when she was switched to tolazamide. Four months prior to admission she was placed back on PZI, 30 U daily, and tolbutamide, 1 Gm. daily, was added. One month prior to admission the tolbutamide was discontinued and phenformin, 50 mg. twice a day, was begun.

During the preceding 6 years she had had persistent 3+ to 4+ proteinuria. Ten months prior to admission the blood urea nitrogen was 18 mg. Four months later it was 30 mg. and 2 months prior to admission 40 mg.

On the evening prior to admission the patient vomited 2 hours after dinner and, feeling tired, she went to bed. Upon awakening the following morning she took her phenformin but did not eat breakfast. The patient's daughter, with whom she lived, left the house, but when speaking with her mother on the telephone at 10:00 a.m. noted that she sounded short of breath. Upon arriving at home at 1:30 p.m. she found her mother unresponsive in bed. She was brought by ambulance to D. C. General Hospital at 2:25 p.m.

In the Emergency Room her blood pressure was recorded as 140/80, the pulse rate 88, the respiratory rate 28, and the temperature 98.8°F. Because of the character of her respirations, blood gases were drawn immediately, and the patient was then sent to the ward.

Physical examination revealed the patient to respond only to vocal stimuli by opening her eyes, and to painful stimuli by withdrawing the extremity. The respiratory rate was 32 with Kussmaul respirations. The blood pressure was 130/80, the pulse rate 104, and the temperature 98.2°F rectally. The pupils were equal but did not react to light. The optic discs were normal. Many exudates were seen in the fundi. The lungs were clear. The jugular venous pressure was not elevated, and the cardiac examination was not remarkable other than for the tachycardia. The peripheral pulses were full, the extremities were warm, and there was no cyanosis or edema. The remainder of the physical examination was normal.

The hematocrit was 41 per cent and the white blood cells 32,700 with 71 per cent polys, 6 bands, 1 metamyelocyte, 3 myelocytes, 7 lymphocytes, and 11 monocytes. The platelets appeared adequate in number. Urinalysis showed 3+ sugar, a small amount of acetone, and 4+ albumin. The blood urea nitrogen was 61 mg. and the creatinine 2.0 mg. The blood sugar was 132 mg., with a trace of serum acetone on undiluted serum, Na 140 mEq./L, K 4.2 mEq./L, Cl 97 mEq./L, and CO_2 6 mEq./L. Arterial blood gases showed pH 6.95, pCO_2 19 mm. Hg, and pO_2 104 mm. Hg. Blood levels of methanol, ethanol, and salicylate were negative. The arterial blood lactate concentration was 18.4 mEq./L. Subsequent laboratory data are recorded in table 1.

TABLE 1: Serial Arterial Blood pH Determinations and Amount of $NaHCO_3$ Administered
(Time zero refers to the time the patient was seen in the Emergency Room.)

Time (hrs.)	Arterial pH	$NaHCO_3$ administered (mEq.)
0	6.95	
3	7.28	356
8½	7.37	176
10	7.45	
13½	7.37	
19	7.07	

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* Postdoctoral Research Fellow in Cardiology, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver, Colo. 80220; formerly Instructor in Medicine, Georgetown University School of Medicine, and Chief Medical Officer, Georgetown University Medical Division, District of Columbia General Hospital, Washington, D. C.

A diagnosis of lactic acidosis probably due to phenformin was made, and the patient initially received 8 ampules of $NaHCO_3$ (356 mEq.) diluted with 200 c.c. of 5 per cent dextrose in water over a 3-hour period. The arterial pH at the end of this time was 7.28. Additional bicarbonate brought the arterial pH to 7.45 at 12:45 a.m. The patient remained comatose. The spinal fluid showed a pH of 7.24 which was not thought to be low enough (normal CSF pH 7.27–7.34) to account for the coma. Microscopic examination showed 2 white blood cells and 550 red blood cells per cu. mm. No organisms were seen on gram stain.

At 4:00 a.m., 13 hours after admission, the arterial blood pH was 7.37, and the blood pressure was 80/55. Over the ensuing 6 hours the blood pressure remained low and the temperature rose to 101°F. She received 500 mg. kanamycin and 75 mg. colistin intravenously to treat the possibility of gram-negative septicemia. Blood cultures subsequently were sterile. At 9:40 a.m., 19½ hours after admission, heart action stopped and attempts at resuscitation were unsuccessful.

Autopsy showed arteriosclerotic heart disease with an area of myocardial fibrosis in the posterior wall of the left ventricle. The heart weighed 490 Gm. The lungs showed minimal pulmonary edema and congestion. The liver revealed a moderate degree of fatty metamorphosis. The kidneys weighed 140 and 150 Gm. and showed moderately severe diabetic glomerulosclerosis and evidence of chronic pyelonephritis bilaterally. The brain appeared grossly normal.

Discussion

Phenformin has been shown to interfere with cellular oxidative metabolism probably through inhibition of the oxidative phosphorylation of those intermediaries of the citric acid cycle which are NAD-dependent.[14, 15] This would be expected to result in stimulation of anaerobic metabolic pathways. The demonstration in vitro that rat and guinea pig tissues incubated with phenformin have a decreased oxygen uptake, increased glucose uptake, and increased lactate production[16, 17, 18] is consistent with such a shift toward anaerobic glycolysis.

In human subjects taking phenformin, resting blood lactate levels have been found to be normal or elevated depending on the dosage employed.[19-22] Utilizing a relatively low dose of 75 mg. per day, Guttler et al[21] found no increase in the resting blood lactate levels of diabetics over nondiabetic controls. In another study diabetics taking 100 mg. per day showed no change in lactate levels, but increasing the dose to 175 mg. per day produced a 2-fold increase in lactate levels.[19] Fajans et al[20] noted marked increases in blood lactate levels with a dose of 100 to 250 mg. phenformin per day.

During early clinical experience with phenformin Walker et al [22, 23] noted 3 patients with severe metabolic acidosis in whom lactic acid accumulation was suspected but not proven. Subsequently Bernier et al[3] and Tranquada et al[2] established that lactic acid was responsible for the acidosis in several phenformin-treated diabetics who had severe metabolic acidosis with minimal or no ketonemia. However, in these and most of the subsequently reported cases the presence of shock or some other cause of tissue hypoxia has made it difficult to directly ascribe the lactic acidosis to phenformin alone.

To date 18 cases of lactic acidosis in association with phenformin therapy have been reported (table 2). Fourteen cases have occurred in females, 4 in males. The age range was 40 to 74 years. The length of time on phenformin varied from 5½ days to 4 years.

It will be noted (table 2) that 9 of the 18 patients were in shock at the time the acidosis was first detected. In the remaining cases a variety of other potential sources of lactic acid production existed and are summarized herein. In 2 instances (cases 6 and 11) shock developed within 1 to 7 hours following the acidosis, and it might be argued that these patients were in a state of preshock, since lactic acidosis may occur prior to a fall in blood pressure.[24, 25] In case 10 the temporal relationship of shock to the acidosis is not clear. Two other patients (cases 9 and 12) exhibited peripheral cyanosis at the time the acidosis was first recognized, indicating impaired peripheral perfusion despite normal blood pressures. One patient (case 7) had an underlying acute arterial occlusion of the leg as a possible source of lactate production. And finally, 1 patient (case 13) had no evidence of circulatory insufficiency at any time but on the preceding day had consumed a large amount of ethanol which per se may cause or contribute to lactic acidosis.[26, 27, 28]

Recently, however, an individual patient (case 14) was reported who took 1,500 mg. of phenformin in a suicide attempt and subsequently developed a moderately severe acidosis without other apparent cause.[9] Similarly, in the present case no other cause for the severe lactic acidosis (pH 6.95) could be found; the arterial oxygen tension was normal, the blood ethanol level was negative, and there was no evidence of circulatory failure initially. In fact, the cardiovascular status remained stable for 13 hours during which time the acidosis was fully corrected (pH 7.45).

It is apparent that theoretically phenformin may be related to lactic acidosis in one of 3 ways. The drug may be (a) the sole cause of the lactic acidosis, (b) a contributing or aggravating cause of a preëxisting lactic acidosis, or (c) bear no causal relationship to the lactic acidosis. The case described here and the suicidal attempt are the only reported instances of lactic acidosis occurring in a phenformin-treated patient without other potential causes of lactic acid overproduction, and although this does not constitute absolute proof of cause and effect it does, at least, raise the possibility that phenformin alone may produce lactic acidosis. In those patients with shock or other underlying source of lactic-acid overproduction phenformin may contribute to, or aggravate the acidosis by impeding the metabolism of lactic acid so formed. Experimental support for this concept comes from the demonstration that diabetic patients have a higher and more sustained lactate level following intravenously administered lactate loads when taking phenformin.[19] Whether phenformin similarly enhances the hyperlacticacidemia following exercise is unclear.[21, 22, 29] It remains possible, however, that phenformin bears no causal relationship to lactic acidosis since lactic acidosis (without apparent etiology) has occurred in

TABLE 2: Summary of Clinical Data on Patients Taking Phenformin Who Developed Lactic Acidosis

Case No.	Ref. No.	Sex	Age (yrs.)	Length of Time on DB1	Dosage (mg./day)	Shock at Time Acidosis First Detected	Blood Sugar (mg. %)	Serum Acetone	BUN (mg. %)	HCO$_3^-$ (mEq./L)	Lactate (mEq./L)	L/P Ratio	pH	WBC
1	1	F	49	3 years	200	Yes	532	Urine neg.	34	4.6	—	—	—	12,000 45,000
2	2	F	69	18 months	150	Yes	—	Neg.	82	5	25.0	29	6.72	22,500
3	2	F	74	5½ days	50	Yes	—	Neg.	47	8	30.8	43	7.26	11,000
4	2	F	68	About 30 days	75	Yes	—	Trace	120	5	27.7	31	7.18	18,000 10,000
5	3	F	69	3 months	100	Yes	270	Trace	*	2	20.9	43	—	—
6	3	F	40	2 years	100	1 hr. later	—	Neg.	21	5	18	40	7.16	—
7	4	F	45	9 days	75–150	No†	362	Trace	44	4.0	10.1	19	—	—
8	5	M	68	2 hours	175	Yes	5	Moderate	—	3	—	—	—	—
9	5	M	66	2 months	100	No‡	100	Neg.	42	3.6	31.1	18	6.8	10,700
10	6	F	62	6 days	100	No§	76	Neg.	108	8.3	11.7	—	7.2	—
11	6	F	69	1 year	75	No‖	206	Neg.	44	4.4	23.3	233	—	22,300
12	7	M	66	—	75	No¶	175	Neg.	40	4.9	14.2	25	6.77	—
13	8	M	43	6 weeks	150	No	118	Neg.	21	9	10	—	6.98	44,900
14	9	F	44	—	1,500 mg. in suicide attempt	No	12	—	9	14	—	—	7.24	—
15	10	F	52	7 months	100	Yes	167	Neg.	36	9.9	24	105	6.83	31,000
16	11	F	67	4 years	75	Yes	—	Neg.	60	4.4	16.7	185	6.96	—
17	12	F	64	13 months	100; took 50 mg. extra 12 hrs. prior to admission	Yes	140	Neg.	70	5.8	26.7	—	—	20,500
18	#	F	63	1 month	100	No	132	Trace	61	6	18.4	—	6.95	32,700

* No BUN given, but patient had "impaired renal function."

† Developed hypotension within 6 hours after acidosis was detected.

‡ Patient showed cyanosis and evidence of pulmonary congestion at time of admission to Hospital. Blood pressure fell "shortly afterward."

§ Authors state acidosis preceded shock, but B. P. was 60/0 on day acidosis was detected.

‖ Developed shock and died within 7 hours after admission.

¶ Patient had mottled cyanosis of both legs on admission.

# Present case.

nondiabetics[30, 31] and a few diabetics not taking phenformin.[28, 31]

It is noteworthy that most of the patients reported in the literature had had impaired renal function, the previously mentioned intentional overdose in a suicide attempt being a notable exception. The kidneys are the main route for excretion of phenformin metabolites,[32, 33] and increased serum levels of the drug or its metabolites have been demonstrated in patients with varying degrees of azotemia*.[2] Presumably, a reduction in glomerular filtration rate permits a potentially toxic level of phenformin to accumulate. Therefore, it seems prudent to withhold phenformin therapy from any patient whose renal function is impaired. In those individuals with clinically normal renal function placed on phenformin periodic checks of the blood urea nitrogen should be made, and if azotemia develops (due to the underlying diabetes) the drug should be discontinued.

The leukocytosis and marked shift to the left seen in the present case have been noted previously in others. In some reports the white blood cell count ranged from 10,700 to 45,000 with metamyelocytes and myelocytes occasionally present in the peripheral smear. Such reactions may occur over a period of a few hours under a variety of stressful conditions including acidosis.[36]

Treatment and course of the 18 cases are summarized in table 3.

Nine of the 18 reported patients died before the acidosis could be corrected or within a matter of hours despite correction of the acidosis. In the present case the acidosis was reversed by the administration of 532 mEq. of sodium bicarbonate and the arterial pH remained normal until hypotension occurred a few hours before death. As has been stressed by Danowski[37] and Huckabee,[24] correction of the acidosis may not prevent a fatal outcome unless the underlying cause of lactic-acid overproduction is removed. Bicarbonate serves only to reverse the acidosis while doing nothing to remove the cause of the lactic-acid production. In this regard it is interesting to note that the 2 patients (cases 7 and 16) who underwent hemodialysis recovered from the acidosis. Whether this was related to removal of the phenformin is not known, since concentrations of the drug were not measured in the dialysate.

TABLE 3: Summary of Treatment and Subsequent Course of Patients Listed in Table 2

Case No.	Ref. No.	Treatment of Acidosis and Course
1	1	Given 450 mEq. $NaHCO_3$ and vasopressors over first 12 hours with recovery
2	2	Died 6 hours after admission. Given 44 mEq. $NaHCO_3$ and vasopressors. Acute myocardial infarction (MI) by EKG and autopsy
3	2	Corrected by 653 mEq. $NaHCO_3$ and peritoneal dialysis, but patient died within 24 hours. Associated condition—hip fracture with wound infection
4	2	Remained acidotic despite 400 mEq. $NaHCO_3$. Probably had acute MI and CHF
5	3	Died 4 hours after admission. Had acute MI 24–48 hours old at time of autopsy
6	3	Acidosis reversed by 1,144 mEq. $NaHCO_3$ and vasopressors. Died 39 hours after admission. Had infarction of almost all of small intestine. Kidneys showed moderate degree of chronic pyelonephritis
7	4	Developed hypotension. Improved following hemodialysis but died 9 days later. Had underlying arterial occlusion of leg
8	5	Died within 6 hours following detection of acidosis. Five days post-TUR
9	5	Acidosis corrected with $NaHCO_3$ and 200 mg. methylene blue by second day. Patient died on fourth day, cause not clear
10	6	Recovered with 445 mEq. $NaHCO_3$
11	6	Treated with 66.7 mEq. $NaHCO_3$ but died 7 hours after admission. Autopsy—LVH and pulmonary edema
12	7	Died within few hours of admission following exploration for pulmonary embolism which was not found
13	8	Recovered with 410 mEq. $NaHCO_3$. Also had bout of prolonged coronary insufficiency and heavy ethanol intake on day prior to onset of acidosis
14	9	Acidosis corrected by 264 mEq. $NaHCO_3$
15	10	Received 404 mEq. $NaHCO_3$ and 2 injections of methylene blue over first 14 hours with correction of acidosis and recovery
16	11	Treated with Tham®, 380 mEq. $NaHCO_3$, and 4-hour hemodialysis with reversal of acidosis and recovery
17	12	Died 28 hours after admission with severe acidosis despite 400 mEq. $NaHCO_3$ and vasopressors. No significant pathology at post
18		See text

Summary

The occurrence of a fatal lactic acidosis in a phenformin-treated patient has been described;

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* The validity of the methodology employed in measuring the serum level of phenformin was subsequently challenged because creatinine has a spectrophotometric absorption similar to phenformin, causing falsely elevated results in azotemic patients not on phenformin.[34] Tranquada[35] disputed these objections, stating that the effect of creatinine is negligible at serum concentrations below 10 mg.

no other cause for the acidosis could be found. On the basis of this case and another report of an acidosis without other apparent cause following an overdosage of phenformin it seems possible that phenformin alone may produce clinical lactic acidosis, although absolute cause and effect have not been proved. In other instances the drug may contribute to or aggravate a lactic acidosis due to other causes.

Almost all of the reported cases of lactic acidosis in association with phenformin have occurred in individuals with some degree of azotemia. This suggests that retention of phenformin due to impaired renal function leads to blood levels potentially capable of producing a lactic acidosis or worsening a lactic acidosis due to other causes. The drug should not be used in patients with azotemia.

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Clinicopathologic Conference

Cardiac Enlargement at Age 24, Death at Age 41

CHANDLER SMITH, M.D., EDITOR*

THE FOLLOWING CASE REPORT was presented for discussion at the biweekly Clinicopathologic Conference held at George Washington University Hospital, October 15, 1968.

The patient was a white man 41 years old who entered the Hospital because of weakness, dyspnea, and swelling of the ankles. At the age of 24 tachycardia and shortness of breath were first noted. Roentgenograms disclosed moderate enlargement of the heart, calcification over both ventricles, and compression of the esophagus. A diagnosis of constrictive pericarditis was made and pericardectomy of the right ventricle was performed. Congestive failure persisted, and decortication of the left ventricle was performed 2 years later. Neither tubercles nor Aschoff bodies were seen in these tissues. Cardiac catheterizations disclosed that the cardiac index and stroke volume were reduced. The mitral valve area was estimated to be smaller than normal. For the past 15 years several hospitalizations had been required for gradually progressive heart failure.

At the age of 6 the patient had suffered from a "nervous condition." From the ages of 6 to 12 he had had fever twice per year without associated arthralgia. The tonsils and adenoids had been removed when he was 6 and again when he was 14. A sister had died at the age of 14 of rheumatic fever. Three cousins with whom the patient had been in close contact as a child had had tuberculosis. At the age of 19 he was discharged from the Army as well and at the age of 23 passed an employment physical examination including chest X-ray films.

The patient was in moderate respiratory distress. The temperature was 36.0°C, the pulse rate 84, the respiratory rate 22, and the blood pressure 120/60 mm. Hg. The neck veins were distended and pulsating. There were diminished breath sounds at the left base. The heart was markedly enlarged and the rate was irregular. The cardiac maximum impulse was diffuse in the left anterior axillary line with a right ventricular heave. There was a pericardial knock and a grade 3/4 holosystolic blowing murmur over the precordium that radiated to the axilla. A 1/6 diastolic rumble was heard at the apex. The abdomen was moderately distended and displayed shifting dullness. A 4-plus pitting edema was present to the knees, and varicosities of the scrotum and both legs were pronounced.

The urine was normal. The hematocrit was 36 per cent, the hemoglobin was 12.5 Gm,. and the leukocytes numbered 8,600 with 67 per cent segmented granulocytes, 3 band cells, 26 lymphocytes, and 4 monocytes. The blood urea nitrogen was 63 mg., the blood sugar 100 mg., and the uric acid 11.4 mg. per 100 ml. The plasma protein was 7.4 Gm. with 4.8 Gm. albumin and 2.6 Gm. globulin. The antistreptolysin 0 titer was negative. An X-ray film of the chest disclosed enlargement of the heart, calcification of the pericardium, pulmonary vascular engorgement, and an increased density in the lower lobe of the left lung. An electrocardiogram revealed atrial fibrillation, right axis deviation, and an intraventricular conduction defect.

The patient was treated with digoxin, diuretics, sedatives, uricosuric agents, bed rest, and low-salt diet. He improved and was discharged after 10 days. He died outside the hospital 3 months later.

Clinical Discussion

DR. MICHAEL T. DONAHOE†: The patient's sister died of rheumatic fever. He reportedly had had tonsillectomy at the ages of 6 and 14 years. Also a definite exposure to tuberculosis was noted. At the age of 24 he had dyspnea and tachycardia and calcification over an enlarged heart. A diagnosis of constrictive pericarditis was made.

The physiologic effects of constrictive pericarditis are an interference with diastole, an impairment of venous return, and a diminished stroke output. Cardiac function is maintained by increase of the heart rate. Systemic venous pressure is increased, as is blood volume. There are increased right atrial and right ventricular mean pressures and an increased right ventricular systolic pressure. This results in a right ventricle diastolic to systolic ratio of greater than 1:3. The circulation time is increased.

I believe a constriction could be localized to the right side, and this was probably expected, since only a right-sided pericardectomy was performed. I doubt that the decreased mitral valve area contributed to the patient's distress because the valve area of 1.4 cm. is not very significant. The patient remained in congestive failure, and 2 years later a left pericardectomy was performed.

---

* Professor of Pathology, George Washington University School of Medicine, 1331 H Street, N.W., Washington, D. C. 20005.

† Resident in Medicine, George Washington University Hospital.

The past 11 years were characterized by a slowly progressive congestive failure. On the final admission the distended neck veins, ascites, varicosities, and peripheral edema indicated right-heart failure. I think the diastolic rumble resulted from mitral stenosis and the presystolic murmur with its radiation to the axilla from mitral insufficiency. The heart sounds rule out septal defects.

The patient's laboratory work revealed a blood urea nitrogen of 63 mg. and a uric acid of 11.4 mg. I do not think the uric acid is of much help; the patient could have been on thiazides and his renal excretion could be low, which would explain the hyperuricemia without other evidence of renal disease. I would assume that the azotemia was prerenal and due to left-heart failure.

In summary, I think that the patient's main trouble was pericarditis combined with myocardial disease. There was also valvular disease, mainly mitral stenosis, of rheumatic origin. However, this contributed little, if at all, to the patient's progressive heart failure with massive 4-chamber enlargement (figure 1). Rheumatic fever can cause pancarditis. However, since constrictive pericarditis is not a feature of rheumatic heart disease I shall have to look for something else.

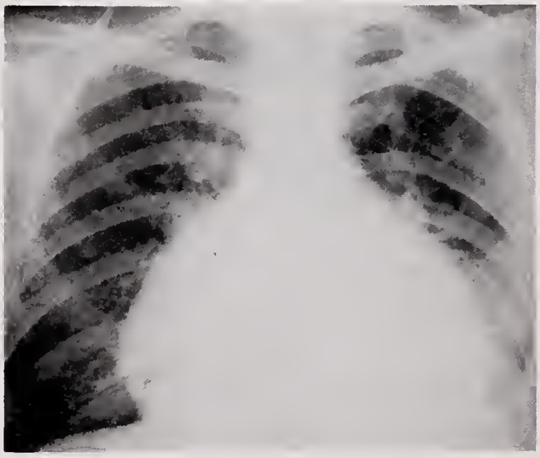

FIG. 1. Severe cardiac enlargement 3 months before death.

The causes of constrictive pericarditis are tuberculosis, pyogenic infections, fungus infections, and sometimes lupus and polyarteritis. In most cases the cause is unknown. Tuberculosis is the most common cause of constrictive pericarditis, and then calcification is common. This could explain the findings on the basis of active tuberculous pericarditis followed by amyloidosis. However, there is no evidence other than exposure that I can find to support this diagnosis. There was no pulmonary tuberculosis at any time, and tuberculosis of the heart usually results from direct extension. I think a pyogenic etiology can be dismissed for lack of any suggestive history.

Pericarditis and myocarditis also result from actinomycosis and histoplasmosis. Histoplasmosis frequently causes extensive calcification and is common in this area. However, I doubt this diagnosis on low probability and lack of other evidence.

Lupus erythematosus could account for all of the cardiac findings. It occasionally causes a pancarditis with valvular disease, especially mitral, and myocarditis with constrictive pericarditis. Polyarteritis may do this too. I reject these diagnoses without L.E. cells, eosinophilia, leukopenia, renal disease, skin changes, or hypertension.

The entity which I feel this patient had is calcific constrictive pericarditis, etiology unknown. This is the most common form. The patient's sudden death may have been due to arrhythmia, mitral insufficiency, or pulmonary infarction. I would think the last most likely.

Dr. Irene I-Lien Hsu Siu*: We followed this patient for 17 years. He had atrial flutter, and quinidine was frequently used to convert the arrhythmia to a nodal rhythm. The right atrial pressure was very high. Following decortication the symptoms improved. X-ray films later showed extensive pericardial calcification and tremendous enlargement of the heart. In spite of all this he was able to enjoy normal activities, worked full-time as an airplane mechanic, built houses, and went fishing. However, as increasing heart failure progressed he became depressed and was at times suicidal.

The clinical diagnoses were constrictive pericarditis with calcification, mitral stenosis and insufficiency, cardiac cirrhosis, and pulmonary embolism with infarction.

Pathology Discussion

Dr. Smith: The heart with attached pericardium weighed 1,025 Gm. The pericardium was thick, hyalinized, and extensively calcified. The external surface was densely attached to the lungs and to the other structures of the mediastinum. The cause of this pericardial fibrosis was not discerned. The myocardium revealed hypertrophy.

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* Associate Professor of Medicine, George Washington University School of Medicine.

The right and left lungs weighed 1,175 and 615 Gm. and revealed passive hyperemia. The liver weighed 2,840 Gm. and disclosed a fine nodular cirrhosis. Perhaps contrary to expectation, this was portal in type. The spleen weighed 725 Gm. and revealed only severe passive hyperemia. Other changes were incidental. No tuberculous lesions were found.

The case is important because it bears on the question of whether mediastinopericarditis is a cause of cardiac hypertrophy. In most cases there is an associated rheumatic disease of the mitral valve.[1] In that event it is not possible to be certain whether the cardiac enlargement is due to the valve dysfunction or to the pericardial adhesions. In the present case the valves were structurally normal (figure 2). It seems, therefore, that the tugging of the left ventricle with each systolic contraction was the cause of the hypertrophy, and even though much of the heart weight is due to the thick pericardial mass the net muscle weight must have exceeded 600 Gm. and perhaps 700 Gm. It thus seems that the tugging is a sufficient explanation of the cardiac enlargement.

Pericarditis has at least 4 forms that are morphologically distinct. The first is acute fibrinous pericarditis which imposes no discernible impediment on cardiac function and very likely subsides without a trace. The second is obliterative fibrosis that seals the pericardial sac but neither constricts the heart nor attaches it to external structures. The third form is constrictive pericarditis in which the characteristic features are a small, quiet heart and a pronounced venous obstruction. The last form, and that represented by this case, is mediastinopericarditis in which the heart becomes adherent to the mediastinal structures including the lungs, diaphragm, and sternum. In this instance, massive cardiac enlargement is common and harsh murmurs are attributable to dilatation of the valve rings rather than to structural alteration of them.

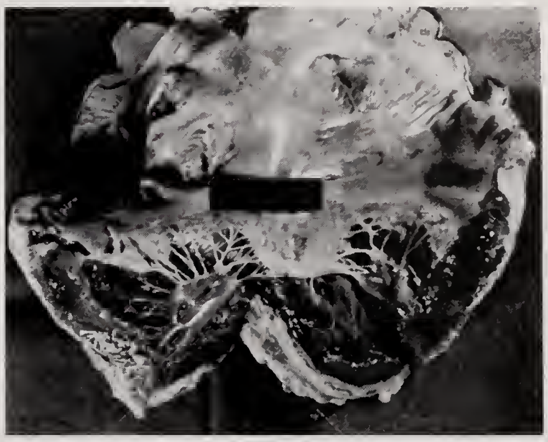

FIG. 2. Opened left ventricle showing normal mitral valve and much thickening of pericardium.

The anatomic diagnoses were chronic mediastinopericarditis with calcification, hypertrophy and dilatation of the heart (1,025 Gm.), passive hyperemia of the lungs, portal cirrhosis of the liver, and passive hyperemia of the spleen.

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President's Page

THE MEDICAL SOCIETY'S UTILIZATION COMMITTEE AND ITS FUNCTIONS

In 1964 the Board of Trustees of the American Medical Association approved a recommendation of its Commission on the Costs of Medical Care which stated in part: "The existence of review committees in given communities should be given wide publicity, their purpose and function making up the content of such publicity. Review mechanisms should be receptive to reviewing claims initiated by patients and third-party carriers as well as by physicians."

An excerpt from the Report of the Council on Medical Services adopted by the House of Delegates in 1969 follows:

> "For more than a decade the Council on Medical Service and its Committee on Health Care Financing (formerly the Committee on Insurance and Prepayment Plans) have recognized a need for the establishment of professional review activities by medical society review committees and utilization review committees of hospital medical staffs. Initially, this interest was generated by concern over the continuing increase in the costs of health care, particularly for hospital services, and the resulting steadily rising rates required from the public for health benefits protection. In accepting a responsibility for professional review activities, the medical profession has demonstrated its awareness of the need to conserve the patient's health care dollar, educate and inform the profession in the economics of health care, assure the appropriate use of health care personnel and facilities, and maintain high standards of medical practice."

The Medical Society of D. C. for a number of years has had a Fee Review Committee. This Committee has considered the reasonableness of any fee charged by a physician that has been questioned by Medical Service of D. C. and health insurance companies. The recommendations of the Fee Review Committee, though advisory, have been accepted by the insurance companies.

Since the implementation of the Medicare Program the Medical Society has had a Hospital Utilization Committee which has acted in an advisory capacity to the Hospital and Extended Care Facilities' utilization committees. Members of the hospital utilization committees, functioning as a part of their hospital staff duties, have performed well in complying with the Medicare Law, which requires a review of the need for hospital care of all long-stay patients.

The Executive Board at its last meeting approved the change of name of the Hospital Utilization Committee of the Medical Society to Utilization Committee. The Utilization Committee has been charged with review and advice on all utilization problems. The Utilization Committee plans to ask the hospitals to extend the function of their utilization committees by advising not only on length of patient stay in the hospital but on the necessity of services rendered. Initially, such committees will be asked only to study questions raised by the party responsible for paying for the services rendered. The expectation is that unnecessary services will not be paid by the responsible party. The Medical Society's Utilization Committee will accept for final review and advice only cases where the responsible party disagrees with the findings of the hospital's committee.

The Medical Society's Utilization Committee will also consider all problems on utilization of services that arise outside the hospital. It will accept for consideration all cases submitted by Medical Service, health insurance companies, the D. C. Health Department (as payer for Medicaid), and patients who pay their own fees.

Patients may make use of the Utilization Committee by writing to the Medical Society. Health insurance companies, the Health Department of D. C., and Medical Service of D. C. will be instructed on what information is needed from them to have a problem considered by the Committee.

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We wish to thank Drs. Marcia K. Bilbao, Louis H. Frische, Josef Rösch and Charles T. Dotter for this exceptionally graphic example of hypotonic duodenography.

Contraindications: Glaucoma, severe cardiac disease.

Precautions: Since varying degrees of urinary hesitancy may occur in elderly men with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

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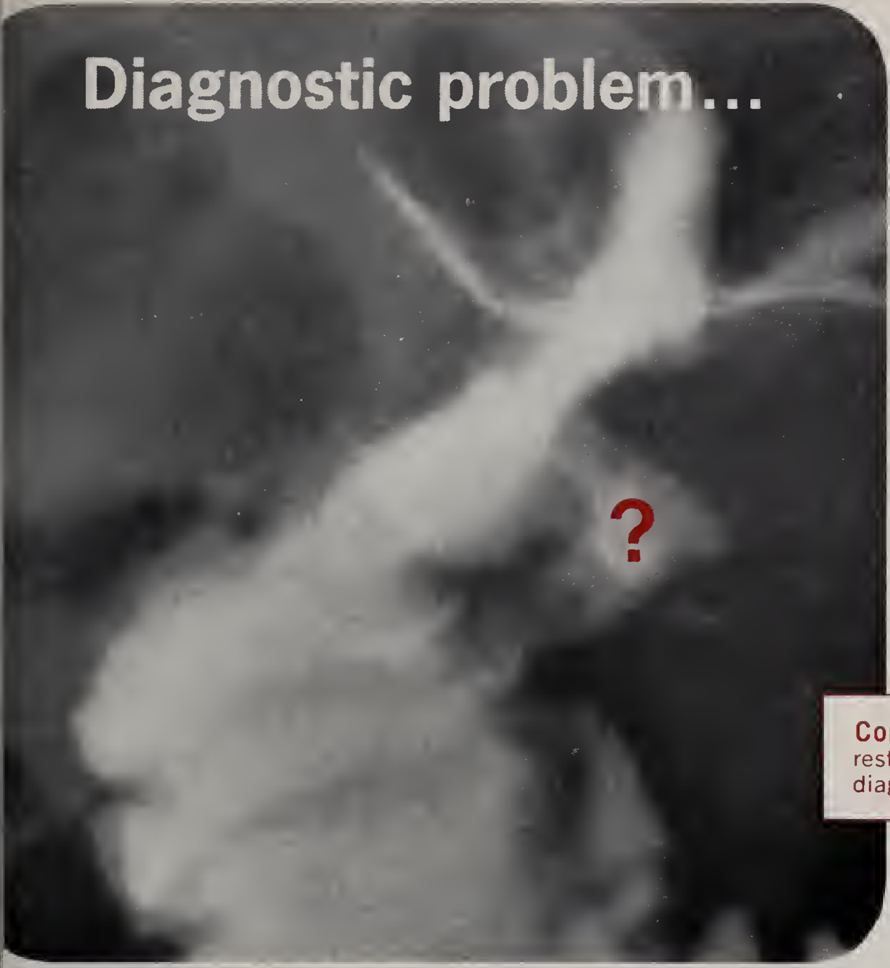
SEARLE *Research in the Service of Medicine*


Diagnostic problem...
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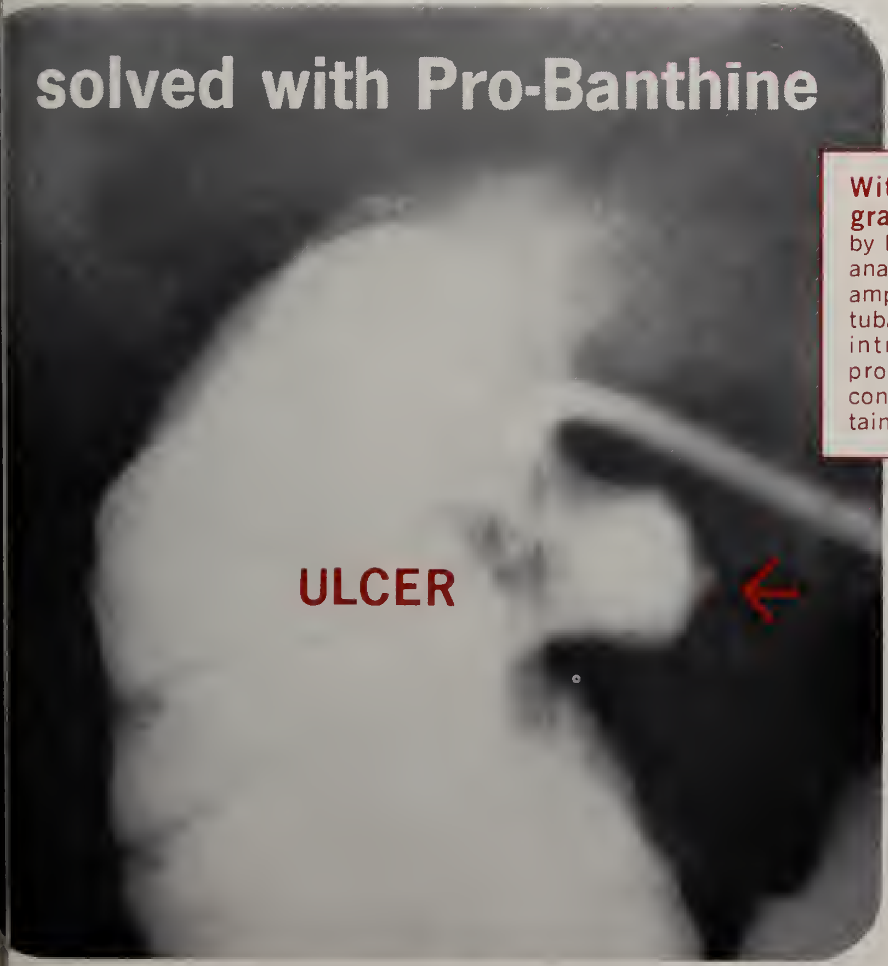
Conventional x-rays of the restless duodenum are often diagnostically indefinite.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Editorials

Charles Stanley White, Sr., M.D.

The story of the life and accomplishments of this physician, who spent more than 60 years in the active practice of surgery, can be equaled by few men in the world of medicine. Dr. White grew up in an age of self-made men, and his attainments were not handed to him but were earned through his own efforts and ability.

Elsewhere in this issue (page 585) there is a brief story of this man's long career, which ended, August 12, at the age of 92. Because of limited space many interesting highlights had to be omitted. One of these occurred during his very early years of practice. In 1902 he was selected to administer the anesthetic to Major Walter Reed in his last illness when he was operated upon by Major William Cline Borden for a ruptured appendix.

Dr. White believed that the greatest impact on medicine in Washington in the early 1900's was made by 2 men, Dr. William P. Carr (affectionately known to all as "Uncle Billy Carr"), an able and top-notch surgeon, and Dr. W. W. Johnston, Professor of Medicine at George Washington Medical School, "a brilliant man and an outstanding internist."

He knew Drs. Charles and Will Mayo intimately and often said that they made a greater impact on medicine nationally in the United States than any other physicians he had ever known.

His friends during his lifetime were legion. They included patients in many lands who survived to become testimonials to his craft and members of the medical, business and social world. Most of those who were closely associated with him in his practice survive him and attest to his kindly leadership. Like many other Washington physicians, I have counted him as a friend from the days when he was teaching "fractures and dislocations" to junior medical school students.

Washington has lost a great citizen and surgery has lost a most able protagonist, a man who spent all of his practicing life in conscious and effective efforts to improve surgery both in himself and in those around him. We shall not see his like again very soon.

H. P. R.

1969 Diabetes Detection Drive

Effective control of diabetes may depend greatly upon early detection. The sooner anyone knows about his diabetes mellitus and brings it under treatment, the better his prognosis usually is. After this, any patient who coöperates can reasonably expect to continue his normal activities and lead a satisfying, productive life.

It is estimated that more than 1,600,000 people in this country are diabetics whose condition has not yet been diagnosed. Furthermore, at least 5,600,000 Americans now living will develop diabetes at some time during their lives. Members of the medical and allied professions, as well as other interested persons, thus can be of real help to hundreds of thousands of unsuspecting diabetics, their families, and the communities in which they live.

Every physician should be concerned with diabetes detection. The Diabetes Association of Washington will again spearhead the Diabetes Detection Drive in the Washington Metropolitan Area during national Diabetes Week, November 16–22. It also conducts a year-round campaign for the detection of diabetes in patients and maintains an information service for the general public.

E. Clarence Rice, M.D.
Executive Director, Diabetes Association of the Washington, D.C. Metropolitan Area

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Community Health Week

As in the past 4 years, Community Health Week will be observed this month by the D. C. Medical Society. On Monday through Wednesday, October 20–22, it will provide the public with free examinations at the Medical Society Building, from 11 a.m. to 3 p.m.

The theme of Community Health Week, which was established by the American Medical Association in 1962, is "Teaming Up for Better Health." This theme is most appropriate this year when leaders in medicine throughout the country have recognized that good health, of necessity, has become just about everybody's business. Dr. Dwight L. Wilbur, retiring President of the AMA, stated recently: "Medicine and society have become so intertwined that they are inseparable."

Consonant with this view, the D.C. Medical Society's Committee on Public Information and Education will be joined again by the Society for the Prevention of Blindness, the Washington Hearing Society, and the D.C. Health Department in sponsoring and performing the examinations this year. We hope in this way to provide a public service and to illustrate the spirit of coöperation between public and private sectors of medical care.

Last year more than 1,100 persons received blood tests, EKG's, chest X-rays, and glaucoma tests during Community Health Week. Our Woman's Auxiliary and the Medical Society's office staff performed the immense task of monitoring the attendees so that the tests could proceed efficiently and expeditiously. In an effort to reduce this task and because of limited space, it was decided to decrease the number of days for free tests from 4 to 3 and the number of hours from 5 to 4 this year while offering additional examining facilities.

We hope that Community Health Week, October 20–22, will be counted as another successful community effort.

Nelson G. Goodman, M.D.
Chairman, Community Health Week

Outline for Communication between Doctors and Clergymen

"Organizing for Dialogue in Medicine and Theology" is the title of a booklet published by the Division of General Welfare Board of Christian Social Concerns, The United Methodist Church. It is written jointly by James T. Hall, Chaplain at Sibley Memorial Hospital, and Dr. Harvey H. Ammerman, Chief of the Section of Neurological Surgery at the same Hospital. Chaplain Hall and Dr. Ammerman often work together in care of patients, and for some years they have been co-chairmen in leading a dialogue group among their colleagues at Sibley.

In April, 1967 at Rochester, Minnesota, the National Methodist Convocation in Medicine and Theology was held in coöperation with Rochester Methodist Hospital and the Mayo Clinic. It was sponsored by the Board of Hospital and Homes, the Board of Christian Social Concerns, the Board of Missions, and the Commission on Chaplains of the Methodist Church. This was the first such meeting of a national scope under religious auspices. The papers presented at that convocation were edited by Dale White and published in book form by the Abingdon Press in September 1968 under the title, "Dialogue in Medicine and Theology." In this book leading clergymen and physicians discussed the contribution of medicine and theology to the health of man; the effect of specialization in both professions on the care of the whole man; the ethical problems stemming from new modes of therapy and the implications of new scientific developments; and the need for closer coöperation and communication between the members of both disciplines.

"Organizing for Dialogue in Medicine and Theology" is a companion volume and very clearly outlines the authors' well-tested procedure in bringing doctors and clergymen into fruitful discussion. Together these publications augment very helpfully the AMA Program Guide, edited by the Reverend Dr. Paul B. McCleave.

"Organizing for Dialogue in Medicine and Theology" gives very specific, detailed instructions particularly applicable to small regular meetings within a hospital setting. Chapter 1 begins with the 3-fold purpose: "to engage in interdisciplinary dialogue, to discuss the common professional problems of physicians and clergymen, and to encourage the development of mutual understanding, trust, and coöperation in the art of healing." It goes on to describe types of leadership for such a group and the duties of the leaders. Advice is given on suitable time for meetings, setting, size of group, basis of membership, frequency of meetings, meeting notices, attendance requirements, choosing subject material, expansion of the group, characteristics of the initial session, and the group process.

Each of the 4 subsequent chapters, "Man, Superman or Cyborg," "The Abortion Dilemma," "Euthanasia," and "Organ Transplants," could be used by such a group in preparation for a scheduled meeting and should provide a background for lively discussion. Each is unbiased, very thought-provoking, and so short that reading it before the meeting would not impose on the time of the participants.

This booklet has the advantage of being concise, inexpensive,* and easily distributed to all who are interested in initiating or participating in such a dialogue. While the AMA manual is also excellent in giving suggestions for various types of meetings and in providing program material it is large and less easily distributed. It does have the advantage of being looseleaf, so additions and revisions can be made from time to time It is less applicable to the short, in-hospital, small, ongoing meetings.

Now, with this detailed guide the members of the Committee on Medicine and Religion of the Medical Society of D.C. should find the sponsoring of such groups for dialogue in other area hospitals less frustrating. The Committee would welcome the coöperation of any physician volunteers who would like to help establish a physician-clergyman dialogue group in the hospital of their choice.

Elizabeth S. Kahler, M.D.
Chairman, Committee on Medicine and Religion

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* Single copy, 75 cents; quantity prices on request. Order No. T-1182 from Service Department, 100 Maryland Ave., N. E., Washington, D. C. 20002.

Liver Transplant at Children's Hospital—A Case Report

The following case report was prepared by physicians, members of the Medical Staff of Children's Hospital of the District of Columbia, in response to inquiries from the press regarding the success of the liver transplant performed on March 2, 1969.

The patient, B. A., was a 4-month-old female child who was born with congenital biliary atresia. A previous operation had disclosed the condition, and a biopsy of the liver had shown advanced cirrhosis of the liver. In preparation for a possible liver transplantation the patient underwent a portacaval shunt at 3 months of age.

In the March 2 operation the transplanted liver was placed in the lower part of the recipient's abdomen as an additional organ; the diseased liver was not removed. The donated organ was obtained from a stillborn fetus in the fifth month of embryonic development. In the first weeks following the transplantation the patient did extremely well, being maintained on azothioprine (Imuran®) and prednisone (an adrenal corticosteroid) to combat the rejection phenomenon.

Physicians were greatly encouraged by an aortogram performed 2 weeks following the operation which showed excellent blood flow through the new liver. The aortogram test, an X-ray dye study, indicated that the liver was alive and growing in its new host.

The child continued in satisfactory condition, but the expected growth of the liver did not occur. Consequently, an exploratory operation was performed, May 14, to determine the status of the liver. It showed that the liver had not grown as hoped but did show evidence of bile production. Microscopic tests of biopsies of the liver showed that it was undergoing rejection. However, the surgical team did not think it was necessary to remove the liver.

Although this liver was not able to replace the patient's liver, much was learned from the case. First, she has remained in satisfactory condition and still lives with her own diseased liver. This indicates that auxiliary (or extra) organs may be placed to help failing organs without removing the failing organ or endangering the life of the patient. It was also demonstrated that tiny fetal parts can be successfully grafted into the bodies of older subjects and that the graft can live for a period of time.

Consequently, although the physicians were greatly disappointed at the ultimate failure of this liver transplantation, much has been learned, and they are encouraged to continue the effort in studying the problem of auxiliary liver transplantation.

In the case of B. A., whose life expectancy is now less than 1 year, it might still be possible to put another auxiliary liver in place whenever a suitable donor becomes available.

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Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.
Warnings: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia. In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.
Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.
Adverse Reactions: (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").
Composition: Tablets—125 mg. (200,000 units), 250 mg. (400,000 units), 500 mg. (800,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

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Report of the Delegates to the AMA House of Delegates

New York, N.Y., July 13–17, 1969

A RECORD NUMBER of items for consideration was placed before the House of Delegates in New York, July 13–17. There were 59 reports and 137 resolutions on a variety of subjects. The business of the House of Delegates was delayed for about 20 minutes by a group of demonstrators on opening day. Addresses on other days by Vice President Spiro Agnew and by Dr. Roger O. Egeberg, Assistant Secretary of HEW for Health and Scientific Affairs, were well received. Actions of the House of Delegates are on file, but items of interest are as follows:

1. The Board of Trustees was asked to develop priorities in the problems of medicine, to outline techniques of solving these problems, and to report progress at each semi-annual session.

2. Changes in the By-laws made the Sections of the AMA more representative by involving the national specialty societies and their members, who are also active members of the AMA, in Section work. This will increase liaison between AMA and specialty groups.

3. Adopted the report of the Committee on Health Care of the Poor calling for action programs, and reaffirmed the right of every person to have available to him adequate health care with the right of freedom of choice of physician and institution. Efforts of medicine to provide good medical care available to all should be continued by all means available to the medical profession.

4. Called for expanded and effective local peer review mechanisms while at the same time deplored problems and possible abuses in the Medicare and Medicaid programs. Reaffirmed AMA support of broad voluntary health programs and urged support of the graduated income tax credit plan for supporting the use of these health programs.

5. Endorsed a Judicial Council Report involving ethical considerations in dealing with clinical laboratories. In addition adopted Substitute Resolution in place of Resolution 71 (A-69) which among other phrases states that it is preferable the laboratory bill the patient or third party directly. Where this is not feasible or where increased cost to patient would result, the bill of the physician should state the name of the laboratory and the exact charge paid or to be paid by the physician to the laboratory. While it is recognized a physician is entitled to fair compensation for services rendered it is considered exploitation of a patient if there is any markup, commission or profit on the services rendered by a laboratory. In billings for laboratory service performed by physicians the bill should provide information as to where the services were performed, what the services were, and the specific charges made.

6. In a policy reversal called for increased Federal funds for medical education to increase enrollment and to support larger enrollments.

7. Approved a report calling on AMA-ERF to seek means of aiding medical students in financial stress, to continue the Institute of Biomedical Research at its present location pending evidence of solid financial support, and to continue its impartial conduit role in allocating money from the industry in the Tobacco and Health Program while still receiving no rewards to itself.

8. Walter Bornemeier, M.D., of Chicago, was elected President-elect; Louise Gloeckner, M.D., of Pennsylvania, was named Vice President; Russell B. Roth, M.D., of Pennsylvania, Speaker of the House; and Frank Walker, M.D., of Georgia, Vice Speaker. Trustees reëlected and unopposed were Burt L. Davis, M.D., of California, Max Parrott, M.D., of Oregon, and Burtis Montgomery, M.D., of Illinois. The vacancy on the Board was filled by C. A. Hoffman, M.D., of West Virginia.

JOHN J HUGHES, M.D., *Delegate*
C. WILLARD CAMALIER, JR., M.D., *Delegate*

Patients Needed at Clinical Center

THE COÖPERATION of physicians is requested in the referral of patients for a study of the efficacy of myocardial revascularization for the treatment of coronary artery disease being conducted by the National Heart Institute at the Clinical Center, National Institutes of Health in Bethesda, Md.

Any patient below 60 years of age, with severe angina pectoris, will be considered. Each patient will have a complete diagnostic evaluation, including cardiac catheterization and coronary angiographic studies. If indicated, operative intervention will then be offered.

Physicians interested in having their patients considered for this project may write or call Dr. Stephen Epstein, Clinical Center, Room 7B-15, National Institutes of Health, Bethesda, Md., 20014; telephone (301) 496-5817.

"All Interns are Alike"

It stands to reason. They all go through the same training; they all have to pass the same tests; they all have to measure up to the same standards; they all are underpaid, too. Therefore, all interns are alike.

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Heart Disease—Is the Culprit Animal Fat or Sugar?

THE OVERCONSUMPTION of sucrose (refined sugar) among the affluent may be the cause of heart disease instead of the currently popular suspect, animal fat. This statement was made by Dr. John Yudkin, Professor of Nutrition and Dietetics of the Queen Elizabeth College of the University of London, at a press conference, June 18, called by the Dairy Council of Greater Metropolitan Washington, D.C. Dr. Yudkin was in the United States on a lecture tour trying to gain interest in the role of diet in coronary thrombosis, specifically the relation of dietary sugar or sucrose to heart disease. He has worked in the field of nutrition for the last 25 years and has published nearly 200 papers in medical and scientific journals.

Sugar, since its refinement from sugar cane and sugar beet, has come to be used extensively in a variety of foods. Two hundred years ago Englishmen consumed 4 pounds of sugar per head per year, compared to 120 pounds today. Americans consume a little less sugar. Now, Englishmen in 2 weeks eat more sugar than they used to eat in a whole year. In the United States people are eating twice as much sugar as they were 70 years ago, but only one-eighth more fat.

Dr. Yudkin has done 4 to 5 years' serious study on the basis of this theory. Publications relating sugar to heart disease are infinitesimal compared to those having to do with fat and heart disease, which go back to 1952.

Dr. Yudkin cannot find any difference among people who have heart disease who do or do not consume a great deal of fat. In 1964 he took a control group of hospitalized persons, who were evenly matched physically, all of whom had had their first heart attack, and he demonstrated that they were eating very much more sugar than others in the hospital who were there for reasons other than heart.

Dr. Yudkin and others have attempted to find out how sucrose might be involved in coronary atherosclerosis by feeding both animals and human volunteers diets in which the carbohydrate was either starch, sucrose, or a mixture of the 2. Results have shown that such changes as diminished growth rate, reduced efficiency of food utilization, decreased longevity, increased levels of cholesterol and triglyceride in the blood, changes in the amount of fat in the liver and adipose tissue, and increased levels of several enzymes in the tissues can be induced in animals consuming sucrose in place of starch. Research has also shown that sucrose can produce increased "stickiness" of the blood platelets, an early stage of blood clotting, and increased circulating insulin levels. Several investigators have suggested that a high insulin level may be an early stage in the development of coronary artery disease.

Dr. Yudkin's hypothesis is that the key to producing coronary artery disease is a rise in insulin. He referred to an article in Lancet[1] in which the authors suggested the cause as being increased insulin in the blood.

One of the factors which have misled physicians for 16 to 17 years is the easy method of measuring cholesterol in the blood.

Cigarettes are a factor in heart disease, and cigarettes also contain insulin and cause a rise of insulin in the blood.

If people gave up sugar, nothing but good could result and certainly no harm, he remarked, but he believes that if they give up animal fats there will be a vitamin E deficiency.

As to the use of cyclamates, he thinks it is better to stop eating sugar, but if you can't give up sugar, use saccharin. He says that in England, although cigarette advertising on TV is not allowed, the use of cigarettes has not decreased. He believes that the sugar industry would not allow labeling sugar packages as being conducive to heart disease, but he said that the consumption of sugar could be curtailed by putting a phenomenal tax on sugar in order to decrease its use.

A. L. E.

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[1] STOUT, R. W., AND VALLANCE-OWEN, J.: Insulin and atheroma; a hypothesis. Lancet, 1969, **1**, 1078.

HEALTH DEPARTMENT NOTES

Supplemental Foods Program

IN JUNE OF THIS YEAR the D. C. Department of Public Health began a Supplemental Foods Program. In the words of the U. S. Department of Agriculture, which provides the food, this program is designed to reach "low-income groups vulnerable to malnutrition." These are pregnant women, women who have delivered within the past year, and infants and children through 5 years of age who are eligible for continuing health care at a Department of Public Health facility.

In implementing this program, we set up 15 authorization centers and 9 distribution points,

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When this number is called, Tuesday through Friday, 2 to 4 p.m., officers of the Narcotics Squad, Washington Metropolitan Police Department, will answer any questions about the illegal use of narcotics and will provide information regarding law enforcement and on civil commitment for users of narcotics.

utilizing facilities offering maternal, infant and child health services. The purpose of using these facilities is 3-fold: Women who have not sought prenatal care in previous pregnancies may well now do so because of the free food program, distribution of food through infant and child care centers may persuade parents to enroll children in well-baby and sick-child clinics, and more mothers may seek postpartum care.

As for the Supplemental Foods Program itself, authorization for participation is made by a Public Health physician or other delegated official. Food coupon books are then issued, which are valid twice a month for a 6-month period, at which time the health status of the authorized individual is reappraised.

Depending on the category of the recipient, the food package received contains from 13 to 18 pounds of food. Foods distributed include evaporated and nonfat dry milk, canned meat or poultry, scrambled egg mix, canned juice, canned vegetables, dehydrated potatoes, farina and corn syrup blend.

Unlike the Food Stamp Program, Supplemental Foods Program coupons are free. No token payment is required, avoiding one of the criticisms leveled at the Food Stamp Program by the poverty groups, specifically the difficulty of capital accumulation for very low-income families.

It is estimated that the retail price of food received from the Department of Agriculture in 1 year will be approximately $18 million.

We believe that approximately 45,000 people in the District are eligible for the program. Some 17,000 persons have already been authorized to participate in the Supplemental Foods Program.

The Supplemental Foods Program is not intended to provide comprehensive nutrition. The purpose of the program is clearly supplemental, intended to upgrade nutritional standards among 3 categories of particularly susceptible persons. It is one way by which we can partially fill the nutritional gap among those who choose to participate.

Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

DOCPAC BRIEFS

The Mounting Cost of Medicaid*

It is ironic that public ire is directed at doctors as the expense of the Medicaid program reaches staggering proportions. They forget that doctors as a body were cool to the experiment from the start, even though they recognized it would release them from much of the humanitarian services they had been rendering at little or no charge.

Dr. D. L. Wilbur, Past President of the AMA, estimates that if the cost of Medicaid continues its present rise it will reach $12 to $16 billions in 5 years.

He gives these suggestions to curtail the runaway:

1. For many patients, substitute for the nursing home a less costly rest-home and offer more outpatient treatment.
2. Encourage local medical societies to be more vigilant in policing unwarranted abuses of the program by certain doctors.
3. Have organized medicine provide more health care in low-income areas by planned and directed facilities.
4. Encourage medical societies to oversee the promotion of cost efficiencies while maintaining quality health care.
5. Let people know that these are the aims of private practitioners and that each doctor is striving to make them workable. They should influence statesmen as to health care, and not become pawns of politicians.

This last suggestion is what DOCPAC is trying to do. We need more members and dues (individual, $20, or family, $30) to work with. Send to DOCPAC, 825 New Hampshire Avenue, N. W., Washington, D. C. 20037 or to the Medical Society, 2007 Eye Street, N. W., Washington, D. C. 20006.

William H. Cooper, M.D.
Chairman, D. C. Political
Action Committee

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Painful night leg cramps...

unwelcome bedfellow for any patient–including those with arthritis, diabetes or PVD

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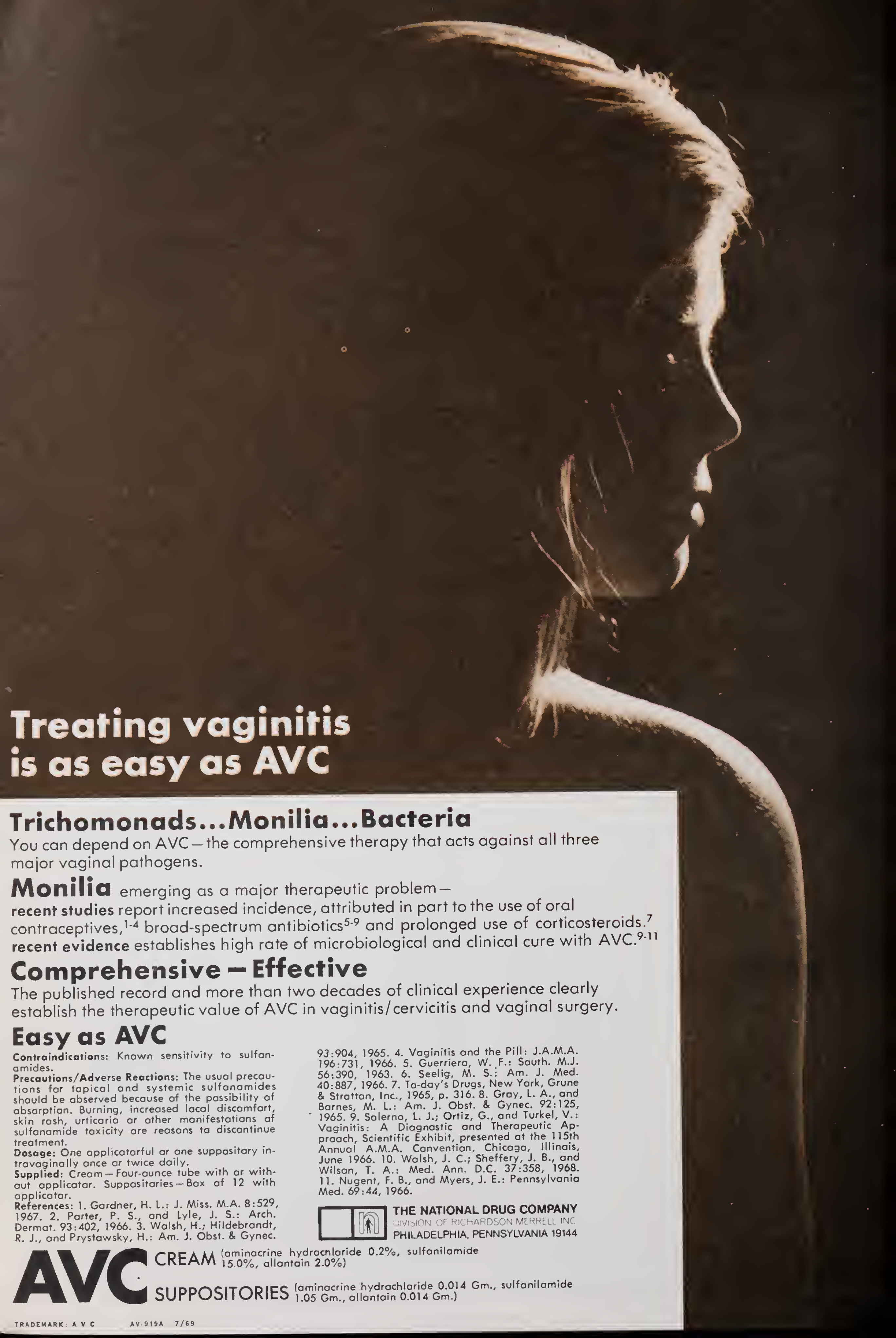

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Supplied: Cream—Four-ounce tube with or without applicator. Suppositories—Box of 12 with applicator.

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Health Services for the Poor People's Campaign*

MURRAY GRANT, M.D., D.P.H.†

IN FEBRUARY 1968, 2 months after the late Reverend Dr. Martin Luther King announced that there would be a Poor People's Campaign in Washington in April 1968, the District of Columbia Department of Public Health began to plan for the necessary health services in connection with the campaign.

During the 1963 civil rights march, when some 200,000 persons came and left the Capital on the same day, we in the Health Department learned the wisdom of advance planning with the many municipal, voluntary, and Federal agencies involved.[1] Therefore, in February 1968 we made the first attempts to begin to work with several of the same agencies. However, information concerning detailed plans for the Poor People's Campaign was extremely scarce. The Southern Christian Leadership Conference opened an office in the City during February, but it proved difficult to learn of plans for the Poor People's Campaign if, indeed, any definite plans existed then.

Rumors there were aplenty. During those early days, for example, there were indications that representatives of the Southern Christian Leadership Conference had canvassed a number of hospitals in Washington. One rumor was of plans to bring a number of sick children from the South and place them "on the steps," as it were, of the hospitals in Washington to be cared for. This tale turned out to be one of many that were not accurate.

The only information that we gleaned from the early meetings was that the general plans of the Leadership Conference called for setting up a campsite for 3,000 to 5,000 people. How long these people might remain in the camp, where the camp would be located, and what sanitary facilities were to be provided and by whom were not known. It proved impossible to ascertain the source of food, how it would be prepared and transported to the campsite, and whether there would be refrigeration facilities or facilities to keep food hot before it was served. Nor was there information as to the source of drinking water or bathing facilities.

It was difficult to learn if there were any preparations to provide medical care or other health services. We also understood that many visitors might stay outside the campsite, perhaps in churches, private homes, or elsewhere. However, we had no way of knowing how many such persons there might be and where they would stay.

At an early date we decided to set up a command post in the central offices of the Health Department in the Municipal Center. The post would serve as the nerve center for a communications network.

During early deliberations the Medical Committee for Human Rights, an organization of physicians who have given medical care during civil rights campaigns in the South, evidenced great interest in helping to provide health services for the Poor People's Campaign. We negotiated actively with them to assure adequate communications.

Later, members of the Medico-Chirurgical Society, a Negro medical society in Washington affiliated with the National Medical Association, and members of the District of Columbia Medical Society expressed great interest in volunteering medical services. The Health and Welfare Council, a voluntary organization in the Metropolitan Area, was also interested in helping to provide and coördinate services. Because communications with and among these groups could well become tangled, we made many efforts to negotiate extensively with all of them.

In a February 27 memorandum to the Mayor-Commissioner of the District of Columbia, I requested him to endeavor to secure authorization for standby medical assistance from the D. C. National Guard which could supplement the District's resources. We had used a similar procedure a number of times before.

During March there were several meetings with the Medical Committee for Human Rights to discuss methods to identify the campaigners as well as to plan the facilities and services for the forthcoming campaign. On March 5 King announced that the Poor People's Campaign would begin on April 22, and a week later I sent another memorandum to the Mayor. It resulted from a meeting with members of the Medical Committee for Human Rights and raised such questions as, Will the tent city be permitted and to what extent will the D. C. Government be required to provide facilities for the campaign?

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* Reprinted (slightly abridged) by permission from Public Health Reports, 1969, 84, 102.

† Director of Public Health, District of Columbia Department of Public Health, 1875 Connecticut Avenue, N.W., Washington, D. C. 20009.

In the memorandum I outlined the facilities and services I believed might be required. I requested the Mayor's guidance and authority on the Health Department's responsibility for providing certain resources. I indicated that agreement would be needed among the Federal agencies involved, the Southern Christian Leadership Conference, and within the D. C. Government concerning payment for rental of necessary facilities for medical care.

I also said in the memorandum that the Department would need authorization to provide medical care to medically indigent, nonresident demonstrators at public expense. It would be necessary for the Department to accept voluntary services from qualified physicians duly licensed in other States but not licensed in the District of Columbia. (By this time it seemed that such physicians from the Medical Committee for Human Rights would provide much of the volunteer medical services.)

On April 4 King was assassinated, and that night there were outbreaks of violence in Washington. The Department of Public Health immediately put in effect its emergency health services plan, activated the command post in the Municipal Center, and began to marshal resources to take care of the possible consequences of the riots. For the next 4 days the command post was operating 24 hours a day. Health Department personnel manned it, rotating tours of duty.

On April 10 Reverend Ralph D. Abernathy, who replaced King as head of the Southern Christian Leadership Conference, announced that the Poor People's Campaign would be deferred until May.

Congressional Interest

Several times during April, May, and June I was requested to meet with members of Congress to discuss my views concerning possible health problems associated with the Poor People's Campaign and the Health Department's plans for meeting such problems. I was also asked the anticipated cost if the Department provided health services. The Health Department's estimate of cost was approximately $85,000.

The Southern Christian Leadership Conference proposed to set up a camp for 3,000 people for an indefinite period, the campers would be family groups of all ages, and they would come from 15 areas of the country. I discussed with members of Congress problems anticipated in 3 general categories and how the Department proposed to handle them.

Sanitation and environmental health. The Health Department was prepared to monitor water, toilet, hand washing, and bathing facilities as well as garbage and refuse collection and disposal. We would also monitor and give technical assistance in the transportation, storage, preparation, and serving of food.

Communicable diseases. We anticipated that some people coming to Washington might have diseases that could spread within the campsite and outside it. The Department would be prepared to find persons with such diseases and to initiate treatment. We were particularly concerned about gastroenteric diseases, parasitic infections, and respiratory diseases such as tuberculosis and meningitis. We were prepared to establish an immunization program, chest X-rays, laboratory tests, and on-the-spot examinations of persons at the tent site. Because it would be necessary to take infected persons to hospitals where they could be isolated and properly cared for, transportation facilities would be needed.

Medical and surgical care. Since we had no authorization to purchase care at voluntary hospitals, ill patients would be transferred to D. C. General Hospital for needed medical or surgical care. As a result of our negotiations, the Army agreed to supply the Health Department with several ambulances to supplement our available vehicles. We also told the Congressmen of the arrangements with medical and dental groups in the area to provide emergency medical and dental care services.

Early in May we conferred again with representatives of many medical and dental groups, including representatives of the Robert T. Freeman Dental Society, to discuss preventive and therapeutic measures needed for the campaign.

In May the first of many meetings was held with the National Park Service. We learned then for the first time that the camp would be located at a site adjoining the reflecting pool, east of the Lincoln Memorial. The land was under the management of the U. S. Department of the Interior, and the National Park Service issued a permit for the camp, effective May 11 to June 16.

Services and Problems at the Camp

On May 12 the first contingent of poor people arrived in Washington; the next day Resurrection City, as it then became known, opened. A number of wooden tents which had been fabricated in nearby Maryland were taken to the site and erected for the campaigners.

On that same day the Department of Public Health transferred 2 medical trailers with equipment to a site just outside the camp. We also arranged for a Public Health nurse and a nurse's aide to be on duty during the day in the trailers. One trailer was used for medical care and the other for dental care. A group of Seventh Day Adventists also provided medical care in another trailer inside the camp.

The Medical Committee for Human Rights coördinated the assignment of physicians and dentists to the campsite, and this arrangement began immediately after Resurrection City opened and continued until the camp was closed. The voluntary services of physicians and dentists from this committee and from local medical and dental societies were the brightest chapter in an otherwise difficult series of events, at least from the public health point of view, as long as Resurrection City existed.

The most serious problems, which began when the camp was opened and continued as long as it remained, concerned the inadequate sanitary facilities and poor maintenance of sanitation. Hand washing or bathing facilities were lacking for several weeks. A large tent served as the dining area, but there were no hand washing or bathing facilities next to the dining tent. Problems of disposal of garbage and refuse mounted. At first, garbage and refuse were collected and disposed of at some unknown location, but this system later broke down. The material was then collected in large drums and at times burned on the spot and at other times merely strewn all over the camp. Flies were attracted to the area, but it is somewhat surprising that no real signs of rodents appeared throughout the 6 weeks that the camp existed.

The preparation, transportation, and serving of food caused us serious concern. Food was prepared at Howard University's cafeteria and at a church. However, facilities for handling and storing food were totally inadequate for some 2,000 persons who ultimately stayed in the camp, and a large number of containers to keep food hot for several hours were obtained from the Department of the Army. A Health Department nutritionist and food sanitarian at the campsite worked closely with those preparing, transporting, and serving the food to insure that the possibility of gastroenteric infections was minimized.

Incessant rains throughout May inundated Resurrection City. The campsite rapidly turned into a quagmire, which made it extremely difficult for service trucks to get in or out. Many residents evacuated the site; in fact, many tents appeared to be floating on the water. Eighteen chemical toilets had been set up at the camp, and it was difficult for the contractor to service these because of the rains. The reflecting pool was the preferred site for bathing, and the Health Department was frequently asked what could be done to maintain the pool in a sanitary condition. Of course, there was no way to do this under the conditions that existed.

In rapid-fire succession during May and June meetings were held with many other organizations such as the Department of Defense, the D. C. Chapter of the American Red Cross, the Public Health Service, the Department of Justice, and the Department of the Interior.

Congressmen expressed concern that the District Government not be required to contribute its tax funds to support Resurrection City. We in the Health Department, therefore, were torn between the admonition of Congress that funds appropriated to our budget were to be used only for appropriate District of Columbia purposes and the desire and need for health services for the Poor People's Campaign. The Health Department endeavored to walk this tightrope by trying to minimize its expenditures while doing everything possible to monitor health service programs, to coördinate activities in the health field, to be certain that disease spread was kept to a minimum, and that necessary medical and dental care was provided.

Two weeks after Resurrection City was opened sanitary conditions were in such a state that we met with the Mayor and a number of officials to discuss the possibility of closing the site for a few days, at least until the rains subsided, the ground dried out, and reasonable sanitation facilities were provided. It would have been extremely difficult, however, to close the camp temporarily. Fortunately, the rains abated and the ground dried out somewhat, but it was still some time before reasonable sanitation facilities were set up. A portion of a statement "for the record" in a Health Department memorandum describes the situation at the camp:

> "There was a lack of adequate space and facilities for the proper conduct of operations involving food preparations, food service, storage and cleaning. All food contact surfaces and equipment were subject to contamination. Prepared foods were brought from unknown sources and held at improper temperatures for extended periods of time. Food service operations were conducted without adequate supervision and by persons lacking knowledge

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> in food protection measures. Garbage and trash were improperly stored and the camp was covered with such items. Flies were prevalent throughout the entire area.
>
> "Toilet facilities were not kept clean even though properly serviced by the contractor; in addition, several toilets were damaged. The one installed hand-washing facility was not conveniently located to the toilets or dining tent. The 3 shower buildings were not sufficient to serve the number of people the camp was designed to accommodate.
>
> "No chest X-rays or immunizations were carried out during the last 2 or 3 weeks because of prevailing bad weather, lack of response, and daily involvement of the residents in demonstrations."

On June 19 the Solidarity Day march was held and the Health Department again made preparations. Seven first-aid stations were located in the march area; 4 were provided by the Health Department, 2 by the Army, and 1 by the Red Cross. The stations were manned by Health Department, Red Cross, and volunteer personnel. On that day 912 persons were treated in the first-aid stations, 29 were referred to hospitals, and 5 were admitted.

For the 6 weeks during which Resurrection City was open, 3,840 patient-visits were made to the medical and dental trailers at the site; 619 patients were referred to hospitals and 23 were admitted. The camp's National Park Service permit, which had been effective only until June 16, was extended to June 23. On June 24 Resurrection City was closed, and 343 residents were jailed in mass arrests at the campsite and on the Capitol grounds. The total estimated cost to the Department of Public Health during the 6 weeks that the camp was open was a little more than $71,000.

Because of the voluntary efforts of many physicians, dentists, and others not only were many people in serious need of health care given it in a dignified manner but also, despite the lack of sanitation facilities, remarkably few cases of gastroenteric infections were observed. Even respiratory illness was only a little greater in prevalence among the campaigners than in the rest of the City during the period of incessant rains and lamentable conditions at the camp. Obviously, these were trying experiences not only for members of the Department of Public Health but also for many other organizations and persons participating in health programs for the Poor People's Campaign.

Other health departments may well face emergencies similar to the situation at Resurrection City. It seems evident that, particularly in large cities, plans should be made for such eventualities so that the health of the people we serve will be adequately protected.

Reference

1. GRANT, M.: Organization of health services for civil rights march. Public Health Rep., 1964, **79**, 461.

NEW MEMBERS

Active

LILLIBETH B. BORUCHOW, M.D. Office: 3801 Connecticut Avenue, N. W. Born in Lancaster, Ohio. Medical degree: Ohio State University, 1963. Specialty: Psychiatry.

PAUL P. GRIFFIN, M.D. Office: Children's Hospital. Born in Goldsboro, N. C. Medical degree: Bowman Gray School of Medicine, 1953. Specialty: Orthopedics.

FRANK S. JANNOTTA, M.D. Office: George Washington University Hospital. Born in Chicago, Ill. Medical degree: University of Pennsylvania, 1955. Specialty: Pathology.

JOSEPH G. MARSHALL, M.D. Office: 4830 V Street, N. W. Born in Far Rockaway, N. Y. Medical degree: New York Medical College, 1963. Specialty: Obstetrics and Gynecology.

MICHAEL J. PETITE, M.D. Office: 2015 R Street, N. W. Born in Youngstown, Ohio. Medical degree: Ohio State Medical School, 1963. Specialty: Psychiatry.

JOSEPH A. SEBASTIANI, M.D. Office: Georgetown University Hospital. Born in Cincinnati, Ohio. Medical degree: University of Cincinnati, 1960. Specialty: Psychiatry.

TRACY M. WALTON, JR., M.D. Office: D. C. General Hospital. Born in Columbia, S. C. Medical degree: Howard University, 1961. Specialty: Radiology.

Associate

EDMUNDO P. VALENCIA, M.D. Office: 4749 Leslie Avenue, S. E., Temple Hills, Md. Born in the Philippines. Medical degree: University of Santo Tomas, 1956. Specialty: General Practice.

Resident-Intern

Raymond Anthony Lloyd, M.D. Office: Veterans Administration Hospital. Born in Jamaica. Medical degree: Howard University, 1966. Specialty: Internal Medicine.

Poliomyelitis-like Illness in Spain

The Director-General of Health for Spain has reported the occurrence of a poliomyelitis-like illness in the Bonavista area of Tarragona. Infection with poliomyelitis virus has been excluded in some cases and has not been demonstrated in others. Authorities in Spain do not consider the incident to represent any risk for international travel.

The Foreign Quarantine Program of the National Communicable Disease Center, Atlanta, Georgia, agrees with this evaluation of the situation. It points out, however, that the incidence of poliomyelitis in some European countries exceeds the incidence of poliomyelitis in the United States. For this reason it recommends that all Americans traveling to Europe be vaccinated with poliovirus vaccine. Children who have completed the American Academy of Pediatrics or the Public Health Service Advisory Committee on Immunization Practices schedule with oral poliovirus vaccine need only a single booster of trivalent oral vaccine. This booster need not be repeated for subsequent trips abroad. Adults who have received fewer than 2 doses of trivalent oral vaccine should have 2 doses 6 to 8 weeks apart before departure. Adults who have had 2 or 3 doses of trivalent oral vaccine should have only a single dose, which need not be repeated for subsequent trips.

Physician Named Vice President of George Washington University

Dr. Seymour Alpert, Professor of Anesthesiology at George Washington University Medical Center, was appointed Vice President for Development for the University, effective September 1. Dr. Alpert is a member of the University Senate and the executive faculty of the Medical School. He chairs the Hospital's Safety Committee and the Medical School's Library Committee. Dr. Alpert was Chairman of the Medical Building Fund Committee for the newly completed addition to the University Hospital and for the planned School of Medicine.

A graduate of Columbia University, he received his medical degree from Long Island College of Medicine in 1943. He was appointed to the staff of the George Washington University School of Medicine and the University Hospital in 1948.

The Medical Society of the District of Columbia awarded Dr. Alpert the Robins Community Service Award at the Annual Awards Luncheon, September 24, at the Mayflower Hotel, during its Scientific Assembly. He is a member of the Society's Board of Credentials and Chairman of its Interdisciplinary Committee on Drug Abuse.

SEYMOUR ALPERT, M.D.
Vice President, George Washington University

He is a member of the American Medical Association, the American Society of Anesthesiologists, the Association of American Medical Colleges, and currently President of the Maryland-D.C. Society of Anesthesiologists. He is consultant in anesthesiology to the Walter Reed Army Medical Center.

Dr. Alpert is also a member of several community organizations, including the United Jewish Appeal of Greater Washington, the Greater Washington Jewish Community Foundation, Metropolitan Boys Club, and Phi Delta Epsilon medical fraternity, which he serves as Executive Secretary.

In addition to his new duties at the University, Dr. Alpert will continue his post as Professor of Anesthesiology.

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News & Personals

Summary of Executive Board Actions

Proceedings of August 25 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting, which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Thomas M. Arnett, Robert J. Coffey, William S. McCune, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Present by invitation were Dr. Warren D. Brill, Chairman, Committee on Public Information and Education, Dr. James H. Carpenter, President, Medico-Chirurgical Society of D. C., Dr. Harvey Ammerman, Chairman, Committee on Medicolegal Problems, and Mr. Lou Brott, public relations consultant. The meeting was called to order by Dr. Wilner at 7:10 p.m.

The minutes of the July 28 meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

July	31	Traffic Committee
August	6	Fee Review Committee
	7	Physician Placement Committee
	7	Colon and Rectal Cancer Study Committee
	12	Board of Credentials
	12	Committee on Aviation Medicine
	13	Ad Hoc Committee of Executive Board
	19	Ad Hoc Committee of Executive Board
	20	Finance Committee

Board of Credentials: On recommendation of the Board of Credentials, 7 applicants were elected to Active membership, 1 to Associate membership, and 1 to Resident-Intern membership. Their names appear on page 574. Approval was given to the following changes in membership status:

Transfers

Active to Associate: Edgar N. Brawner, Jr., V. John Murgolo, and Lawrence J. Thomas

Resignations

Active: Habeeb Bacchus and Gad Gerd Guttman
Associate: Lewis C. Robbins and David A. Zohn
Resident-Intern: J. David Pearah

Dr. Paul E. Zehfuss was reinstated to Associate membership.

Dr. Alexandre J. Ohin, Ambassador to the United States from Togo, a region in West Africa, was approved by the Board as an Honorary member.

Malpractice Insurance: Dr. Ammerman, Chairman of the Committee on Medicolegal Problems, reviewed the history of the now defunct Case Review Committee. He also reviewed the history of malpractice insurance as it relates to the Society's endorsed carrier. He pointed out that gigantic increases in premiums for malpractice insurance are prevalent throughout the country and, in his opinion, physicians are now highly vulnerable. He suggested that a Council Body (panel of consultants) be established by the Society in an effort to reduce malpractice claims and to help the physician avoid court action if it should become indicated. He suggested further that 2 or more specialists in each field be appointed to the Council Body in order to minimize the responsibility for each member.

Dr. Wilner thanked Dr. Ammerman for his presentation and asked him to submit a concrete proposal to the Executive Board for implementation.

Before leaving, Dr. Ammerman mentioned that he is now exploring new contracts being issued by St. Paul. Of concern is the fact that the contracts now being issued allow for cancellation of a policy on 10 days' notice rather than the former 30 days' notice.

Nominating Committee: The proposed ballot for selection of the Nominating Committee, as submitted by Dr. Bacon, was approved.

Annual Business Meeting: It was decided that the Annual Business Meeting be held on

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Regional Medical Program: A report on RMP activities by Director Arthur E. Wentz was accepted for information.

"Incorporation of Physicians": Dr. Bacon pointed out the pros and cons for incorporation of physicians. A motion was made and carried that Dr. Ralph Caulk's letter of August 4 and the folder, "Incorporation of Physicians," which he enclosed, be referred to the Legislative Committee for study.

Luncheon meeting with Dr. Murray Grant: Dr. Bacon reported that the main topic of discussion at the luncheon meeting, August 22, was the proposed Peer Review Committee (Medicaid). Dr. Bacon stated that he had received a letter from Dr. Reinaldo A. Ferrer, Associate Director for Medical Care of the D. C. Health Department, about such a committee and Dr. Grant did not agree with the contents of the letter. Dr. Bacon had drafted a letter to Dr. Grant regarding the proposed Peer Review Committee which he read and the Board approved.

Ad Hoc Committee on D. C. Public Health Department: Dr. Coffey, Chairman of this Committee, reported on 2 meetings which the Committee had held regarding an entire reorganization of the Health Department and the appointment of a successor to Health Director Grant. He presented for the Board's approval a proposed statement for release to the press and/or appropriate D. C. officials, expressing the views of the Medical Society and an offer of assistance. The Board thought the statement excellent but that it would be a more significant document if it expressed the views of both the D. C. Medical Society and the Medico-Chirurgical Society of D. C. Dr. Carpenter agreed and stated that he would present the statement to his Society for approval or revision and return it to Dr. Bacon for final preparation as a joint statement.

The Board nominated Dr. Coffey to represent the Medical Society on the Task Force.

Legislative Committee: The Board accepted Dr. Bacon's choice of appointees to the Legislative Committee. They are: Dr. Herbert M. Giffin, Chairman; Drs. Edward Adelson, Melvin G. Alper, Harvey Ammerman, William H. Cooper, William R. Felts, Jr., Oscar B. Hunter, Jr., Paula R. Kaiser, Oscar Legault, Agnes L. McNutt, Robert E. Moran, Jr., J. Lawn Thompson, Jr., and Joseph J. Wallace.

Committee on Bone Banks: Dr. Wilner then read a letter from Dr. Leonard T. Peterson, Chairman of the Committee on Bone Banks, dated August 9, in which he stated that the Committee was of the unanimous opinion that Tissue Banks, either regional or national, are necessary and feasible but should not be initiated and/or sponsored by the D. C. Medical Society.

Other Business

1. Dr. Camalier read the delegates' report on the AMA Convention in New York City, July 13–17 (see page 565 in this issue). The Board accepted the report and complimented Dr. Camalier on the presentation.

2. Following amplification by Dr. Bacon, a motion was made and carried to endorse the proposed D. C. Uniform Anatomical Gift Act as presented by Senator Charles E. Goodell of New York.

3. Dr. Bacon reported having just received a copy of the document, "A Statistical Report on Selected Health Problems in the District of Columbia" prepared for the Medical Committee on Human Rights. The Board was in agreement with Dr. Bacon's proposal that the report, in part or whole, be presented to various committees for consideration and for constructive recommendations as to what the Society should do about the situation set forth in the report.

4. The Board approved the request of Dr. Wallace M. Yater that Captain Lay M. Fox, MC, USN, be appointed Consulting Editor to the MEDICAL ANNALS, succeeding Captain George Tarr, Jr., to represent the U. S. Naval Hospital.

There being no further business the meeting was adjourned at 9:40 p.m.

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Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

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e of impaired renal or hepatic function.
xical reactions (*e.g.*, excitement, stimula-
d acute rage) have been reported in psy-
patients. Employ usual precautions in
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g depression; suicidal tendencies may be
and protective measures necessary. Vari-
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MEETINGS

The 23rd Clinical Convention of the American Medical Association will be held in Denver, Colorado, November 30 through December 3, 1969. Headquarters hotel will be the Denver Hilton. Scientific sessions will be in Denver's convention complex where there is ample exhibit space and meeting rooms.

The Department of Pediatrics of Georgetown University School of Medicine is presenting its sixth **John Fitzgerald Kennedy Memorial Lectureship** on November 21, 1969. The lecturer this year, Dr. Frederick C. Robbins, Dean of Medicine, Western Reserve University, will speak on "Interaction of Virus and Host" in the Gorman Auditorium at 10:30 a.m. The lecture will be preceded by Grand Rounds at 8:30 a.m. All interested physicians are cordially invited to attend.

GENERAL NEWS

Several Caribbean islands which have had no smallpox or yellow fever for a number of years have been declared exempt, effective immediately, from United States foreign quarantine requirements. The islands newly exempted are Bonaire, Dominican Republic, Grand Cayman Island, Haiti, Trinidad and Tobago, as well as all islands of the Leeward and Windward groups. Dr. David J. Sencer, Director of the National Communicable Disease Center, Atlanta, Ga., said the islands were added to the list of quarantine-exempt areas because they have very adequate safeguards against introduction of quarantinable diseases from infected areas of the world.

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Dr. Sean O'Reilly has been appointed **Professor and Chairman of the Department of Neurology of George Washington University Medical Center,** effective September 1. He **succeeds Dr. James W. Watts,** who is continuing in practice but retiring as Chairman of the Department.

Dr. O'Reilly comes to the University from California, where he was Associate Professor of Neurology at the University of California School of Medicine and Chief of Neurology and Clinical Neurochemistry at San Francisco General Hospital. He received his medical degree from the National University of Ireland, at Cork, and trained in England before coming to the United States in 1954.

On July 1, Eastern Dispensary and Casualty Hospital became the **Rogers Memorial Hospital.** The Board of Directors of the Hospital, located at Massachusetts and Constitution Avenues, N.E., selected the name as a tribute to the dedicated service rendered the Hospital for many years by the late Dr. Joseph Decatur Rogers and other members of the Rogers family. Opened as Eastern Dispensary in a modest house in 1888,

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the now 250-bed hospital handles all types of cases other than maternity. Dr. Joseph Rogers Young is President of the Board of Directors.

Georgetown University recently received 2 sizable grants. A grant of $20,000, awarded by the Pharmaceutical Manufacturers Association Foundation, will enable Dr. George E. Schreiner, Professor of Medicine and the principal investigator, to continue research into the use of artificial kidney machines for saving lives of persons poisoned by drugs. Thus far the PMA Foundation has awarded $60,000 to the Georgetown University Kidney Fund under a 5-year grant. Part of the grant funds will be used for publication of *Transactions*, published annually by the American Society of Artificial Internal Organs, which is edited by Dr. Schreiner.

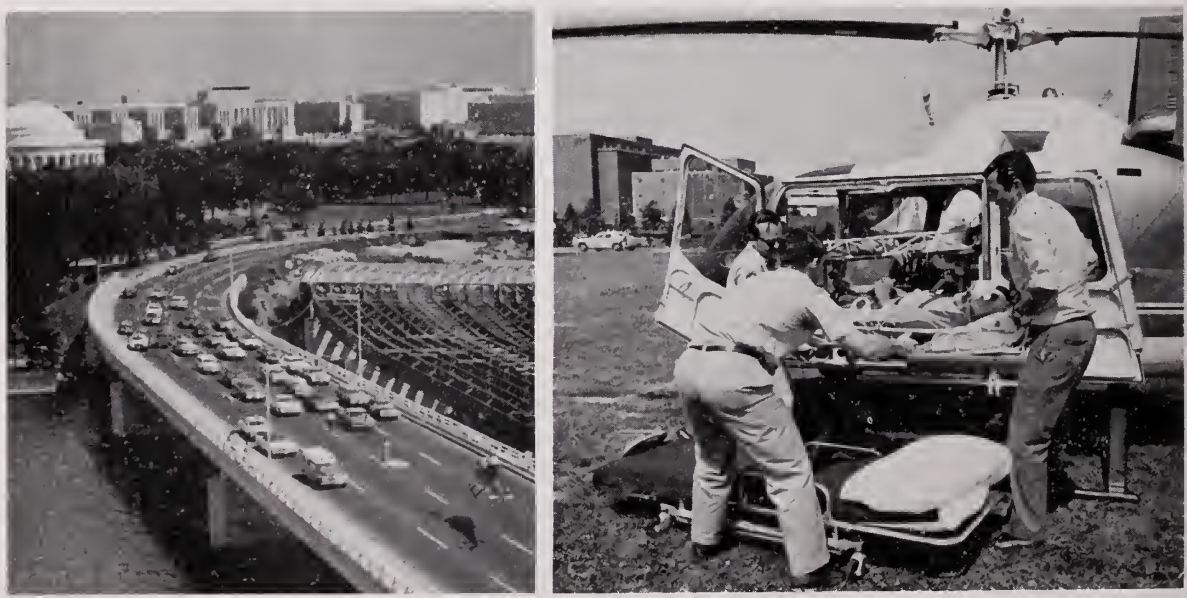
The second grant to Georgetown University, $46,807 over a 2-year period, from the National Library of Medicine, Department of Health, Education, and Welfare, will be used to study sources of information, ranging from medical journals to meetings, which orthopedic surgeons believe to be most helpful. The principal researchers for this study are Dr. George W. Hyatt, Professor of Surgery and Director of the Division of Orthopedics, and Dr. Walter Abendschein, resident in orthopedics at the Hospital.

PERSONALS

Vice Admiral Robert B. Brown, MC, USN (Ret.) was honored by the Executives of the Federal Hospitals at the Annual Meeting of the American Hospital Association in Chicago, August 18–21. Admiral Brown, who served as Surgeon General of the Navy from 1965 until the end of January in 1969, received a Certificate of Appreciation, signed by the heads of all the Federal Medical Agencies, which lauded him for his "long and distinguished career." His retirement marked the completion of a 27-year career in the Medical Corps of the Navy.

Dr. George W. Hyatt, Professor of Surgery at Georgetown University School of Medicine, has been elected President of the Society for Cryobiology.

Dr. John Newdorp, an Associate member of the D. C. Medical Society, succeeded Dr. Warren F. Draper as Executive Medical Officer of the United Mine Workers Welfare and Retirement Fund, September 1. Dr. Draper had served in this position since the inception of the medical program in 1948. Dr. Newdorp has been his deputy for the past 5 years.



AERO-EVACUATION DEMONSTRATION PROJECT

On Labor Day weekend, August 29–September 1, members of the D. C. Medical Society's Committee on Aviation Medicine carried out a test aero-evacuation program for use in emergency situations. Fairchild-Hiller Corporation furnished the helicopter ambulance; the Bethesda-Chevy Chase Rescue Squad provided trained personnel and emergency equipment; and 12 area hospitals participated in the program. There were 6 pick-ups in all. From the busy Fourteenth Street Bridge, shown above, the helicopter ambulance had the "patients" in the Washington Hospital Center emergency room in 12 minutes instead of the usual 45 or an hour. The project was carried out under the chairmanship of Dr. Robert S. Poole.

►OBITUARIES

Charles Stanley White, Sr., M.D.

(1877–1969)

Dr. Charles Stanley White, one of Washington's most distinguished physicians, whose practice of surgery in the Metropolitan Area extended over a period of 65 years, died at Doctors Hospital, August 12, 1969, following a long illness. At the height of his career he was a national figure in the field of surgery.

Dr. White was born, July 1, 1877, at 1105 E Street, S.W., located on "The Island," so called because the southwestern portion of the city at that time was separated from the northern part by a system of canals. His father, George White, was a foundryman, and Charles was one of 9 children.

Charles went to work for a mortar company as a bookkeeper, and in the evening attended classes in the Medical Department of Columbian College (now George Washington University). After receiving his medical degree in 1898 he spent a year as resident physician at George Washington University Hospital. During the next 2 years he was house physician at Columbia Hospital for Women, and in 1901 young Dr. White entered general practice.

After a course in physiology at Harvard University, he was offered the post of Chief Resident in Surgery at Emergency Hospital, which he filled from 1903 until 1908. During the years that followed he served as attending surgeon on the staffs of many hospitals, including Children's, Garfield, Emergency, George Washington University and Columbia.

In 1914 he was appointed Assistant Professor of Surgery at George Washington University and was Professor of Surgery from 1930 to 1946. He also headed the Departments of Surgery at George Washington and Doctors Hospitals for many years.

With the advent of World War I, White was appointed Lt. Commander of the United States Naval Reserve and became Chairman of the District of Columbia Board of Selective Service. In World War II he was commissioned Major in the U. S. Army and served again on the Board of Selective Service.

Charles Stanley White contributed over 150 scientific articles for publication. As early as 1908 he published in *Surgery, Gynecology and Obstetrics* an article on massage of the heart in cardiac arrest. He authored a book of personal recollections and reminiscences in 1963 under the title, "Surgical Interlude."

In 1937 he started the fifth blood bank in the United States, along with Dr. Jacob J. Weinstein and, with Dr. Weinstein, wrote the book, "Plasma and Blood Substitutes." He was the first in Washington to employ surgery in pulmonary tuberculosis.

CHARLES STANLEY WHITE, M.D.
(From a 1943 photo)

He was one of the moving spirits in planning and building the Washington Medical Center in the vicinity of 18th and Eye Streets, N.W. His own offices were in the first building to be erected, the Washington Medical Building. The Columbia Medical Building, 915 19th Street, and Doctors Hospital were built later and he was President of the Center until 1960.

He was one of the organizers of Group Hospitalization, which began to function in 1934, and was a member of its Board of Directors. After Medical Service of the District of Columbia was started in 1948, he became a member of its Board of Directors and served as President from 1950 to 1951.

While President of the Medical Society of the District of Columbia in 1927, he inaugurated the first Annual Scientific Assembly, which has been a feature of the Society ever since.

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his administration President Franklin D. Roosevelt cited him for his services to the Selective Service System. He was awarded the degree of Doctor of Science by George Washington University in 1946 and the same year was elected to its Board of Trustees. He received other citations and special recognition from the George Washington University General Alumni Association, the George Washington University Medical Society, the D.C. Medical Society, the Medical Society of Virginia, the D.C. Women's Auxiliary to the Southern Medical Association, and the Pan American Medical Society of Washington.

The March 1965 issue of the MEDICAL ANNALS, the Doctors Hospital Number, was dedicated to Dr. White and contains much of interest concerning him during his long distinguished career. He served on the Editorial Board of the ANNALS from 1946 to 1964.

Dr. White was a "founding" Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, a member of the American Medical Association, a Life member of the District of Columbia Medical Society and the Clinico-Pathological Society of Washington, and a member and Past President of the Washington Academy of Surgery. He was also a member of the Phi Chi and Sigma Xi fraternities, the Shrine, the Rotary Club, and the Cosmos, Chevy Chase, and Metropolitan Clubs. He served for many years on the Board of Trustees of Riggs National Bank.

In 1913 Dr. White was married to Blanche Martha Strong, who survives him; she resides at their home for many years, 2310 Kalorama Road, N.W. An only son, Dr. Charles Stanley White, Jr., died suddenly, April 10, 1964, at the height of his surgical career. A daughter, Mrs. Edward N. Kimball, Jr., of Rye, N. Y., has had a most distinguished career in psychology.

An oil portrait of Dr. White, painted by Bjorn Egeli in 1957, hangs on the wall of the Medical Library at Doctors Hospital.

HERBERT P. RAMSEY, M.D.

Horatio Nelson Dorman, M.D.

(1886–1969)

DR. HORATIO N. DORMAN, Washington urologist for 45 years, died, August 20, 1969, in Lewiston, Maine. He lived at 4201 Fordham Road, N.W.

Dr. Dorman was born in Aurora, Maine, March 10, 1886. He received his A.B. degree from Bates College, Lewiston, in 1910 and his medical degree from Bowdoin Medical School, Brunswick, in 1918. After interning at old Emergency Hospital in Washington he served a preceptorship with Dr. H. A. Fowler from 1920 to 1923.

Dr. Dorman was an associate in urology at Emergency Hospital from 1923 until 1943, when he became Chief of Staff in Urology. In 1943 he joined the staff of Suburban Hospital as an associate in urology and later headed the department. In 1960 the medical staff of the Washington Hospital Center honored him for his long service to Emergency Hospital and the Center.

Elected to Active membership in the Medical Society of the District of Columbia in 1923, he became a Life member in 1963. He was a diplomate of the American Board of Urology, a Fellow of the American College of Surgeons, a member of the American Medical Association, the American Urological Association, the International Medical Club of Washington, and a member and Past President of the Mid-Atlantic Section of the American Urological Association and the Washington Urological Society. He was also a member of the University Club.

He is survived by his wife, Mrs. Olive Peabody Dorman, and 3 sons, Dr. Hamilton P. Dorman, of Sumner, Md.; Dr. Parker S. Dorman, of Rockville, Md., and Wayne E. Dorman, of Washington.

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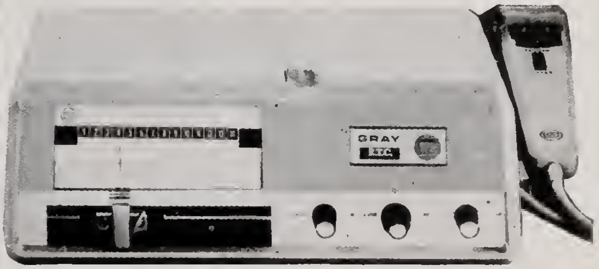

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Prescribe cautiously in hyperthyroid patients and in those receiving thyroid medications, transient cardiac arrhythmias have occurred in rare instances

Periodic blood and liver studies should supplement careful clinical observations in all patients undergoing extended courses of therapy.

Adverse Reactions The following have been reported. *Nervous System* dizziness, drowsiness, insomnia, headache, disturbed visual accommodation, tremor, unsteadiness, tinnitus, paresthesias, changes in EEG patterns, epileptiform seizures, mild extrapyramidal activity, falling and neuromuscular incoordination. A confusional state (with such symptoms as hallucinations and disorientation), particularly in older patients and at higher dosage, may require discontinuation of the drug *Gastrointestinal Tract* anorexia, dryness of the mouth, nausea, epigastric distress, constipation and diarrhea *Skin* skin rashes (including photosensitization), perspiration and flushing sensations. *Liver*. rare cases of transient jaundice (apparently of an obstructive nature) and liver damage If jaundice or abnormalities in liver function tests occur, discontinue the drug and investigate *Blood Elements* bone-marrow depression, agranulocytosis, thrombocytopenia and purpura If these occur, discontinue the drug Transient eosinophilia has been observed *Cardiovascular System:* orthostatic hypotension and tachycardia. Carefully supervise patients requiring concomitant vasodilating therapy, particularly during initial phases *Genitourinary System* urinary frequency or retention and impotence. *Endocrine System:* occasional hormonal effects, including gynecomastia, galactorrhea and breast enlargement, and decreased libido and estrogenic effect. *Sensitivity:* urticaria and rare instances of drug fever and cross-sensitivity with imipramine.

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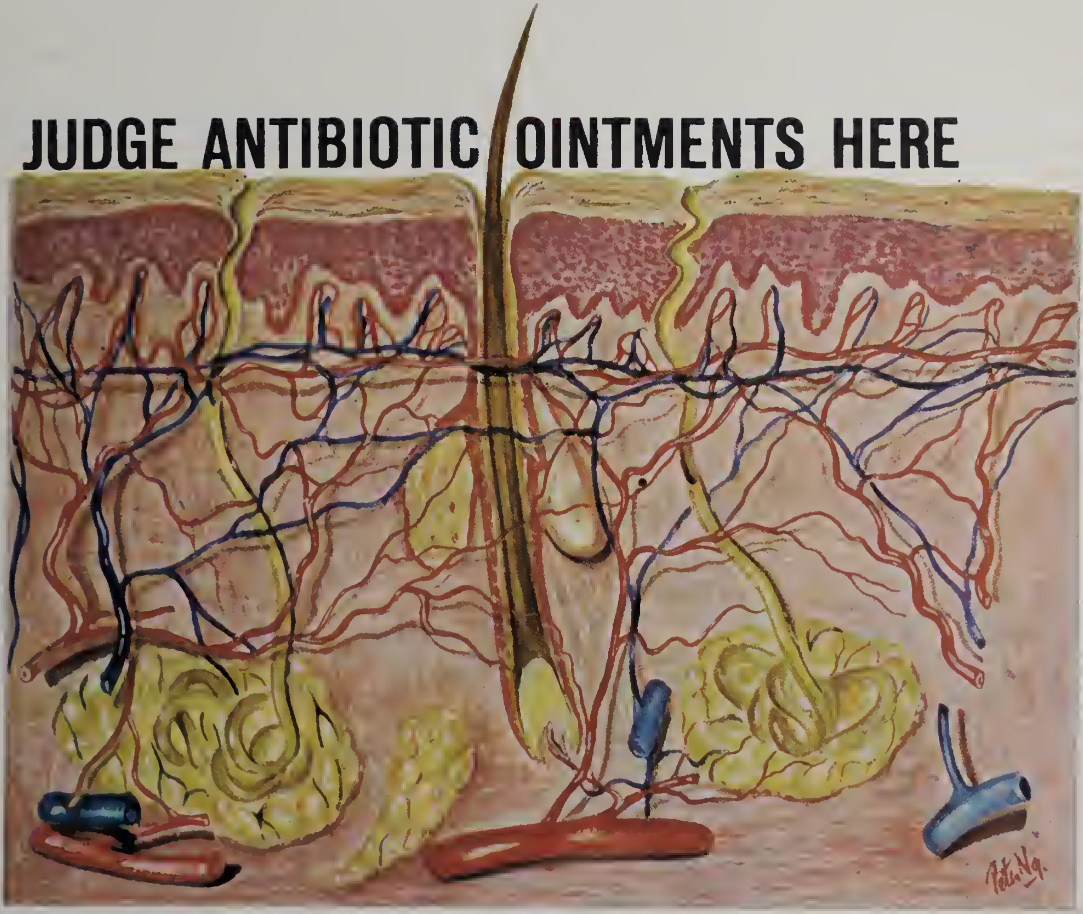

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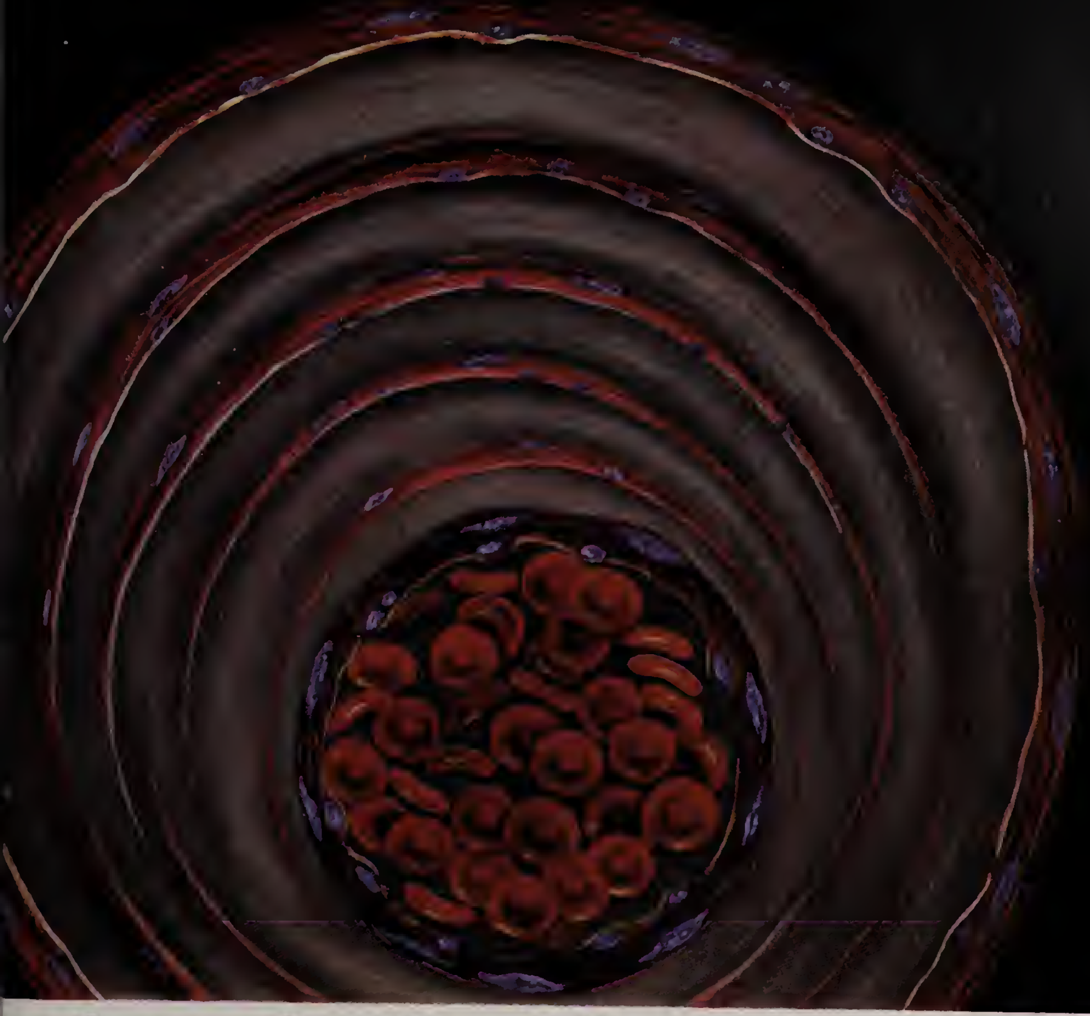

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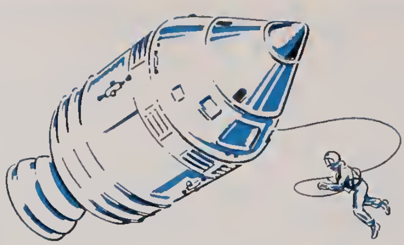

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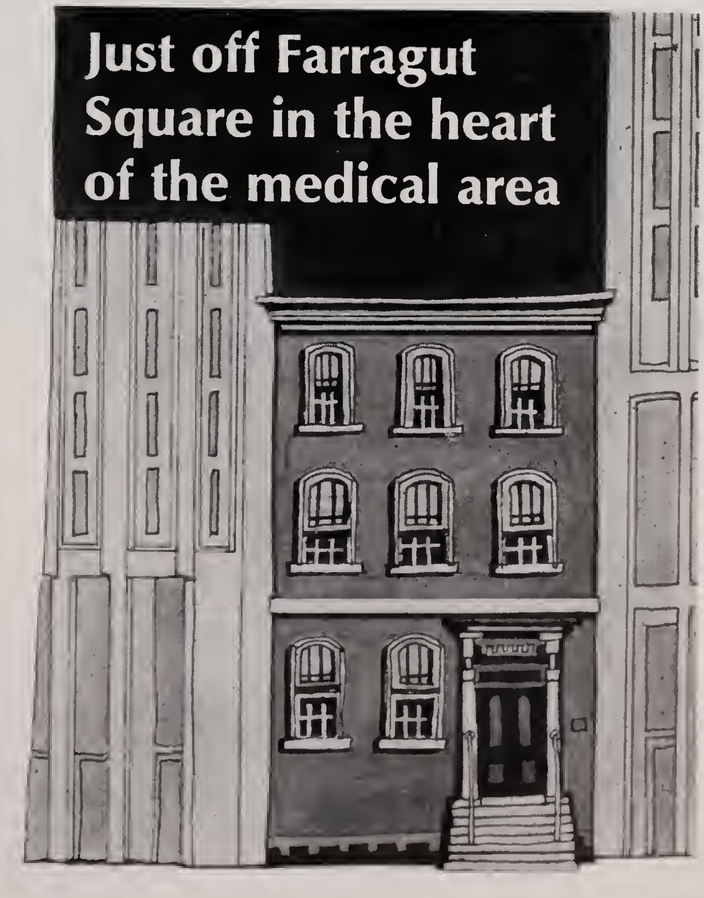
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NATIONAL & REGIONAL MEETINGS

October 29–November 2: American College of Chest Physicians. Palmer House, Chicago. Address: Dr. Alfred Soffer, Executive Director, 112 East Chestnut Street, Chicago, Ill. 60611.

November 3–7: American Society of Tropical Medicine and Hygiene. Shoreham Hotel, Washington. Address: Dr. M. M. Brooke, Executive Secretary, Box 15208, Emory University Branch, Atlanta, Ga. 30333.

November 5–8: American Medical Women's Association. Netherland Hilton Hotel, Cincinnati. Address: Miss Gertrude F. Conroy, Executive Director, 1740 Broadway, New York, N. Y. 10019.

November 7–9: Association of Clinical Scientists. Mayflower Hotel, Washington. Address: Dr. Robert P. Macfate, Secretary-Treasurer, 125 North Rutledge Street, Pentwater, Mich. 49449.

November 10: American College of Chest Physicians (Southern Chapter). Regency Hyatt House, Atlanta, Ga. Address: Mr. Bradford W. Claxton, Staff Coördinator for Education, ACCP, 112 East Chestnut Street, Chicago, Ill. 60611.

November 10–13: Southern Medical Association. Atlanta, Ga. Address: Mr. Robert F. Butts, Executive Director, 2601 Highland Avenue, Birmingham, Ala. 35205.

November 10–14: American College of Preventive Medicine. Philadelphia. Address: Dr. E. A. Piszczek, Executive Secretary, 6410 North Leona Ave., Chicago, Ill. 60646.

November 13–15: Southern Thoracic Surgical Association. Mayflower Hotel, Washington. Address: Dr. James W. Brooks, Secretary, Medical College of Virginia, Richmond, Va. 23219.

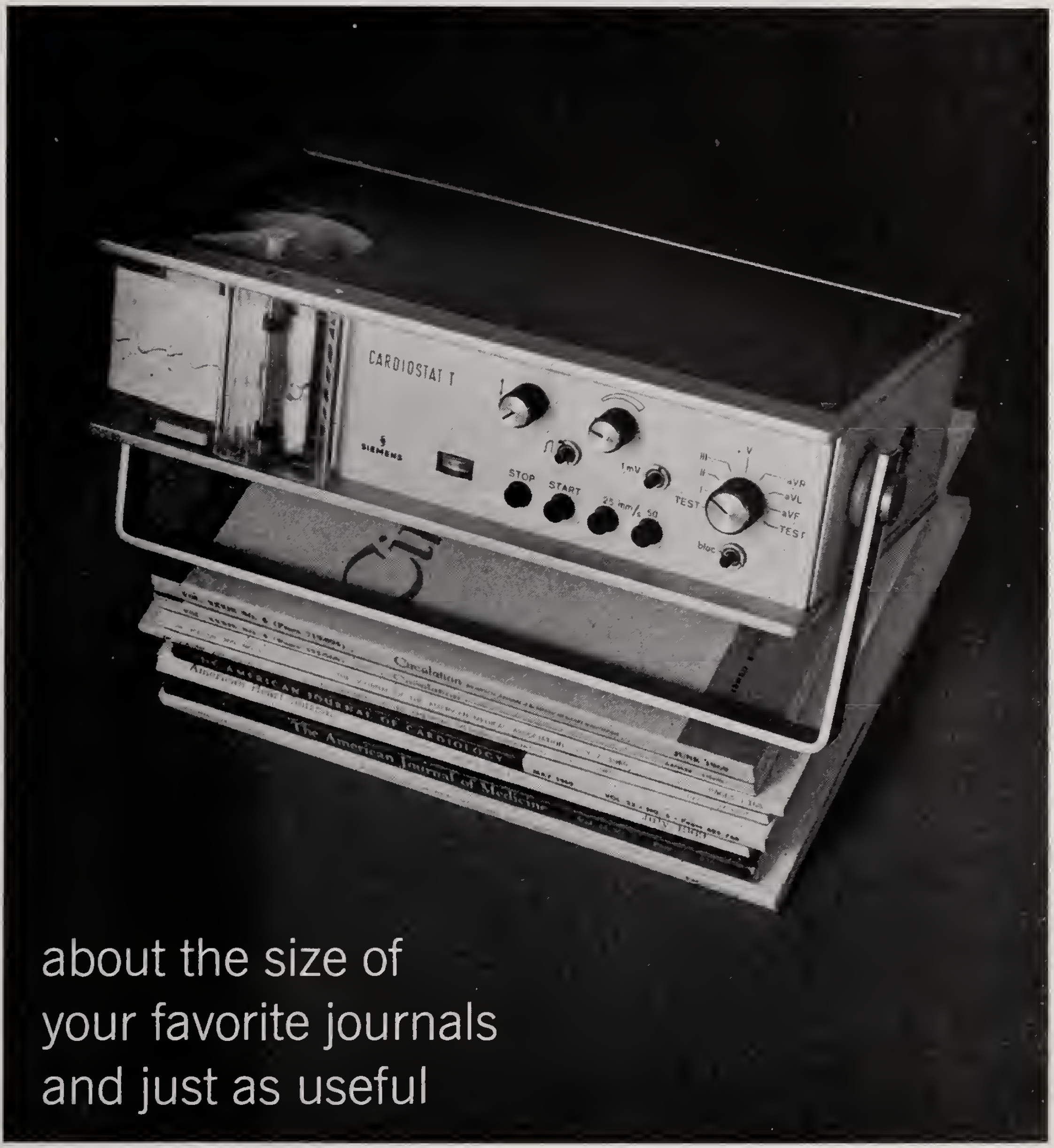
November 13–18: American Heart Association. Memorial Auditorium, Dallas. Address: Dr. James M. Hundley, Executive Director, 44 East 23rd Street, New York, N. Y. 10010.

November 14–15: Symposium on Management of Trauma and Disaster Medical Problems. Ambassador Hotel, Chicago. Address: Dr. William T. Rumage, Jr., Chairman, AMA Committee on Disaster Medical Care, 535 North Dearborn Street, Chicago, Ill. 60610.

November 16–19: Association of Military Surgeons of the United States. Sheraton-Park Hotel, Washington. Address: Brig. Gen. Frank E. Wilson, USAR (Ret.), Executive Director, 1500 Massachusetts Ave., N. W., Washington, D. C. 20005.

November 17–21: World Mental Health Assembly. Hotel Shoreham, Washington. Address: Dr. Norman L. Farberow, Vice President, World Federation for Mental Health, 2521 West Pico Blvd., Los Angeles, Calif., 90006.

November 30–December 3: American Medical Association (Clinical Convention). Denver. Address: Dr. Ernest B. Howard, Executive Vice President, 535 North Dearborn Street, Chicago, Ill. 60610.



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References: 1. Danhof, I. E.: Report on file. 2. Hoon, J. R.: Arch. Surg. *93*:467 (Sept.) 1966.

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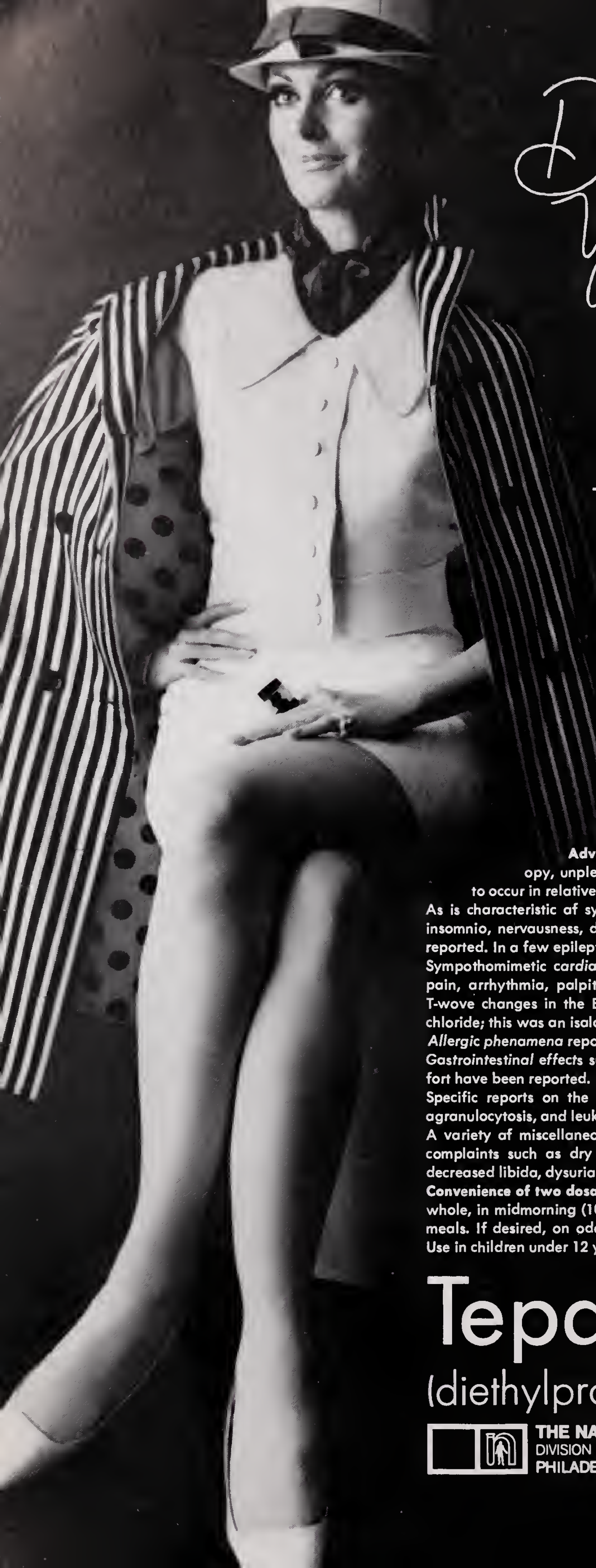

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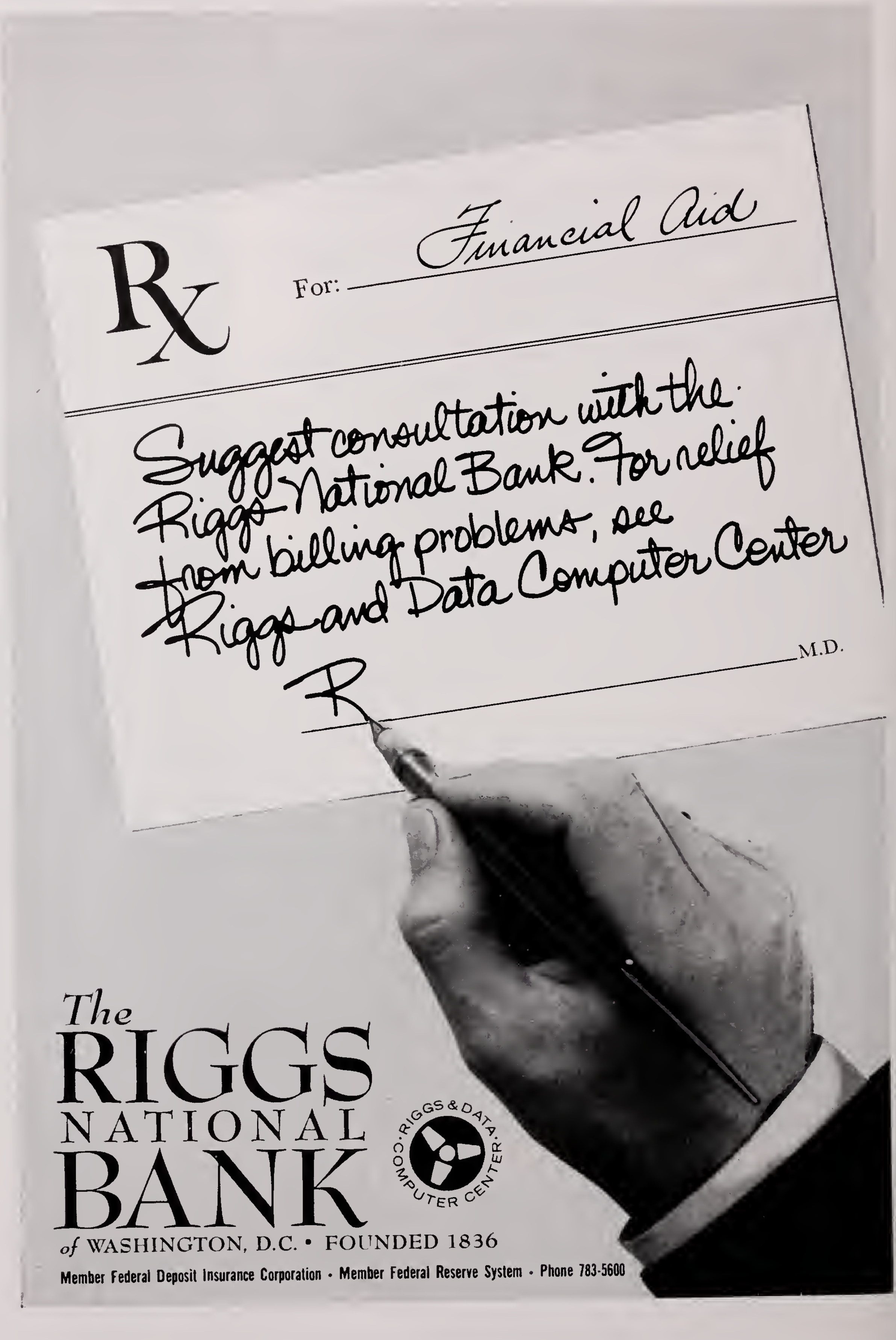

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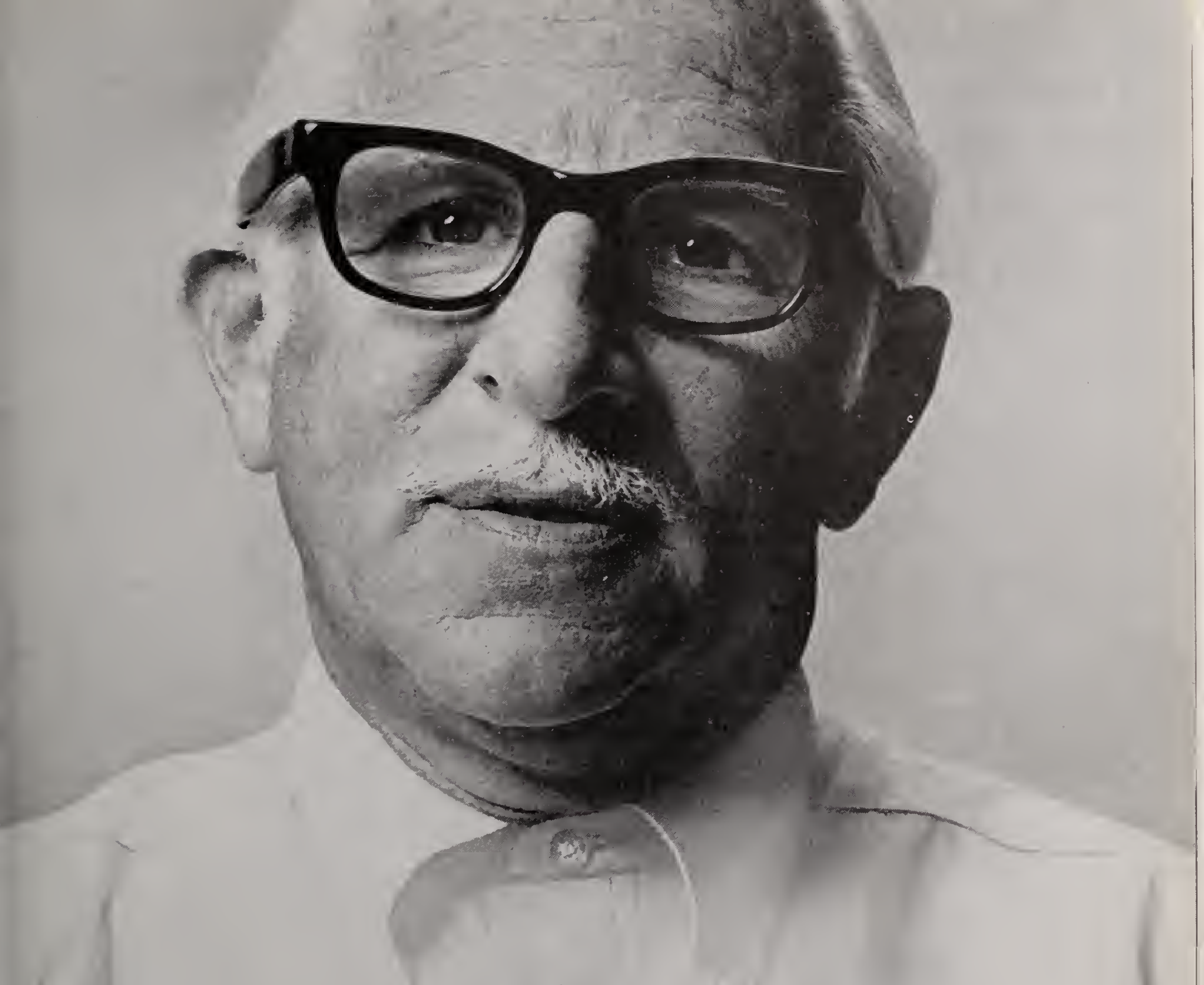

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PRECAUTIONS: Suicide is always a possibility in mental depression and may remain until significant remission occurs. Supervise patients closely in case they may require hospitalization or concomitant electroshock therapy. Untoward reactions have been reported after the combined use of antidepressant agents having various modes of activity. Accordingly, consider possibility of potentiation in combined use of antidepressants. Not recommended for use in children. Mania or hypomania may be precipitated in manic-depressives (perphenazine in TRIAVIL seems to reduce likelihood of this effect). If hypotension develops, epinephrine should not be employed,as its action is blocked and partially reversed by perphenazine. Caution patients about errors of judgment due to change in mood.

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Perphenazine: Should not be used indiscriminately. Use caution in patients with history of convulsive disorders or severe reactions to other phenothiazines. Likelihood of untoward actions greater with high doses. Closely supervise with any dosage. Side effects may be any of those reported with phenothiazine drugs: blood dyscrasias (pancytopenia, thrombocytopenic purpura, leukopenia, agranulocytosis, eosinophilia); liver damage (jaundice, biliary stasis); extrapyramidal symptoms (opisthotonos, oculogyric crisis, hyperreflexia, dystonia, akathisia, dyskinesia, parkinsonism) usually controlled by the concomitant use of effective antiparkinsonian drugs and/or by reduction in dosage, but sometimes persist after discontinuation of the phenothiazine; severe acute hypotension (of particular concern in patients with mitral insufficiency or pheochromocytoma); skin disorders (photosensitivity, itching, erythema, urticaria, eczema, up to exfoliative dermatitis); other allergic reactions (asthma, laryngeal edema, angioneurotic edema, anaphylactoid reactions); peripheral edema; reversed epinephrine effect; endocrine disturbances (lactation, galactorrhea, disturbances of menstrual cycle); grand mal convulsions; cerebral edema; altered cerebrospinal fluid proteins; polyphagia; paradoxical excitement; photophobia; skin pigmentation; failure of ejaculation; EKG abnormalities (quinidine-like effect); reactivation of psychotic processes; catatonic-like states; autonomic reactions such as dryness of the mouth, headache, nausea, vomiting, constipation, obstipation, urinary frequency, blurred vision, nasal congestion, and a change in the pulse rate; hypnotic effects; pigmentary retinopathy; corneal and lenticular pigmentation; occasional lassitude; muscle weakness; mild insomnia; significant unexplained rise in body temperature may suggest intolerance to perphenazine, in which case discontinue. Antiemetic effect may obscure signs of toxicity due to overdosage of other drugs or make diagnosis of other disorders such as brain tumors or intestinal obstruction difficult. May potentiate central nervous system depressants (opiates, analgesics, antihistamines, barbiturates, alcohol), atropine, heat, and phosphorous insecticides.

Amitriptyline: Careful observation of all patients recommended. Side effects include drowsiness (may occur within the first few days of therapy); dizziness; nausea; excitement; hypotension; fainting; fine tremor; jitteriness; weakness; headache; heartburn; anorexia; increased perspiration; incoordination; allergic-type reactions manifested by skin rash, swelling of face and tongue, itching; numbness and tingling of limbs, including peripheral neuropathy; activation of latent schizophrenia (however, the perphenazine content may prevent this reaction in some cases); epileptiform seizures in chronic schizophrenics; temporary confusion, disturbed concentration, or transient visual hallucinations on high doses; evidence of anticholinergic activity, such as tachycardia, dryness of mouth, blurring of vision, urinary retention, constipation, paralytic ileus; agranulocytosis; jaundice. The antidepressant activity may be evident within 3 or 4 days or may take as long as 30 days to develop adequately, and lack of response sometimes occurs. Response to medication will vary according to severity as well as type of depression present. Elderly patients and adolescents can often be managed on lower dosage levels.

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Precautions: Use with caution in moderate hypertension and cardiac decompensation. Cases involving abuse of or dependence on phenmetrazine hydrochloride have been reported. In general, these cases were characterized by excessive consumption of the drug for its central stimulant effect, and have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations or delusions. Do not exceed recommended dosage.

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Dosage: One 25 mg. tablet b.i.d. or t.i.d. Or one 75 mg. Endurets tablet a day, taken by midmorning.

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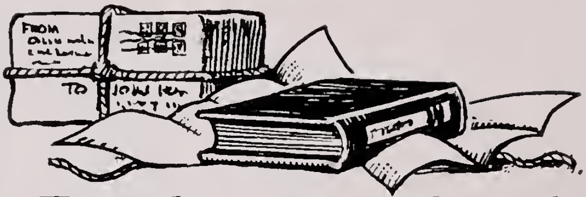

Books Received

Plastic and Maxillofacial Trauma Symposium, Volume I. Proceedings of the Symposium of the Educational Foundation of the American Society of Plastic and Reconstructive Surgeons held at Walter Reed General Hospital, November 30–December 2, 1967. Edited by Nicholas G. Georgiade, D.D.S., M.D., F.A.C.S., with 7 co-editors and 21 contributors. Price, $25.00. Pp. 221, with 390 illustrations. St. Louis: Mosby, 1969.

Benign Diseases of the Vulva and Vagina. Herman L. Gardner, M.D., and Raymond H. Kaufman, M.D. Price, $23.50. Pp. 359, with 406 illustrations, including 2 color plates. St. Louis: Mosby, 1969.

Therapeutic Radiology: Rationale, Technique, Results, 3rd ed. William T. Moss, M.D., and William N. Brand, M.D. Price, $22.50. Pp. 564, with 303 illustrations. St. Louis: Mosby, 1969.

Manual on Artificial Organs. Volume I. The Artificial Kidney: A guide to understanding for the physician and for the patient. Yukihiko Nosé, M.D., Ph.D. Price, $27.75. Pp. 343, with 401 illustrations. St. Louis: Mosby, 1969.

The Role of Learning in Psychotherapy: A Ciba Foundation Symposium. Edited by Ruth Porter. Price, $12.00. Pp. 340. Boston: Little, 1968.

Physical Diagnosis: The History and Examination of the Patient, 3rd ed. John A. Prior, M.D., Jack S. Silberstein, M.D., and 12 contributors. Price, $10.50. Pp. 436, with 454 illustrations. St. Louis: Mosby, 1969.

Urinary Tract Infection in Childhood and Its Relevance to Disease in Adult Life. Victoria Smallpeice, M.D., F.R.C.P. Price, $9.50. Pp. 171, illustrated. St. Louis: Mosby, 1969.

Essentials of Gastroenterology. J. Ned Smith, Jr., M.D., with assistance in radiology by Kyo R. Lee, M.D. Price, $14.75. Pp. 326, with 131 illustrations. St. Louis: Mosby, 1969.

At Your Own Risk: The Case Against Chiropractic. Ralph Lee Smith. Price, $4.95. Pp. 179. New York: Trident, 1969.

A Synopsis of Contemporary Psychiatry, 4th ed. George A. Ulett, M.D., Ph.D., and D. Wells Goodrich, M.D. Price, $9.50. Pp. 340. St. Louis: Mosby, 1969.

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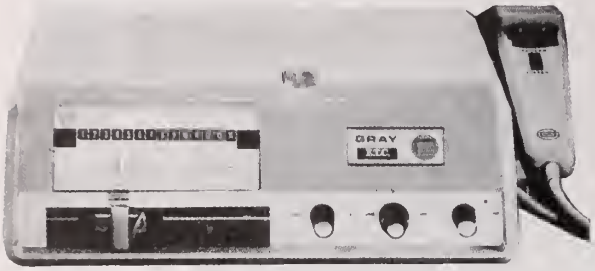

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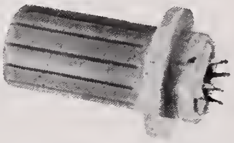

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Book Reviews

System of Ophthalmology. Vol. IV. The Physiology of the Eye and of Vision. Edited by SIR STEWART DUKE-ELDER, G.C.V.O., F.R.S. Price, $39.50. Pp. 734, with 317 illustrations and 1 colored plate. St. Louis: Mosby, 1968.

To those of us in ophthalmology, the works of Duke-Elder have become the standard of reference. The recent Volume IV, which delves into the physiology of the eye and of vision, maintains the standard of excellence established by the earlier works. This volume of 734 pages is very comprehensive in its coverage.

The resident physician, who may have to read this volume line by line and page by page, could well find it a frustrating experience, for he will have to wade through a myriad of data drawn from all corners of the scientific world.

The practicing physician (such as myself) is in a more fortunate position in that he can pick and choose what he reads, often by-passing the technical footnotes and fine print. One can thus appreciate the unique prose and delightful style of Sir Stewart Duke-Elder as he weaves an intricate pattern of history, basic science, and clinical application. The clinical overtones give a refreshing breath to the vast amount of information which less articulate authors have failed to present in a comparable manner.

Most chapters, such as those concerning color vision and visual perception, have practical application. Indeed, at the end of each chapter the reader feels that he has been concerned with humans as opposed to rabbits, rats, and mice!

The new Volume IV is a welcome addition to the superb works of Duke-Elder, and no ophthalmological library should be considered complete without it.

ERNEST ZIMMERMAN, M.D.

Basic Diagnostic Radiology. An Introductory Textbook for Students in the Medical Sciences. MALCOLM D. JONES, M.D. Price, $11.75. Pp. 266, with 511 illustrations. St. Louis: Mosby, 1969.

This is an excellent initial text for the medical student and first-year resident in radiology. It brings to the reader clearly and concisely the important basic concepts which constitute the foundation of radiology.

The book is divided into 4 sections: Chest, Abdomen, Appendicular Areas, and Head and Neck. Prior to each section there is a helpful outline of the material to follow. The outline also serves as a useful summary and review. The author takes the basic concepts, such as density, size, contour, location, position, etc., and illustrates them and their changes quite precisely with examples of particular disease entities. The film reproductions are very good and the schematic illustrations are easily understood. There is a useful selection of books at the end of each section for those who desire to obtain further information regarding the X-ray interpretation of various diseases. Methods of examination, items to be considered in interpreting an X-ray film, projections utilized for each area examined are also covered.

This book is an absolute must for the beginning student of radiology.

GEORGE A. SOLACK, M.D.

Essentials of Gastroenterology. J. NED SMITH, JR., M.D., with assistance in radiology by KYO R. LEE, M.D. Price, $14.75. Pp. 326, with 131 illustrations. St. Louis: Mosby, 1969.

This is an interesting book which deals with, as it is titled, "the essentials of gastroenterology." It is concise and brief and quite readable. While there appears to be many oversights, such as a chapter on the general subject of gastrointestinal bleeding, which is touched upon in several different chapters, I believe that on the whole the author has done a creditable job.

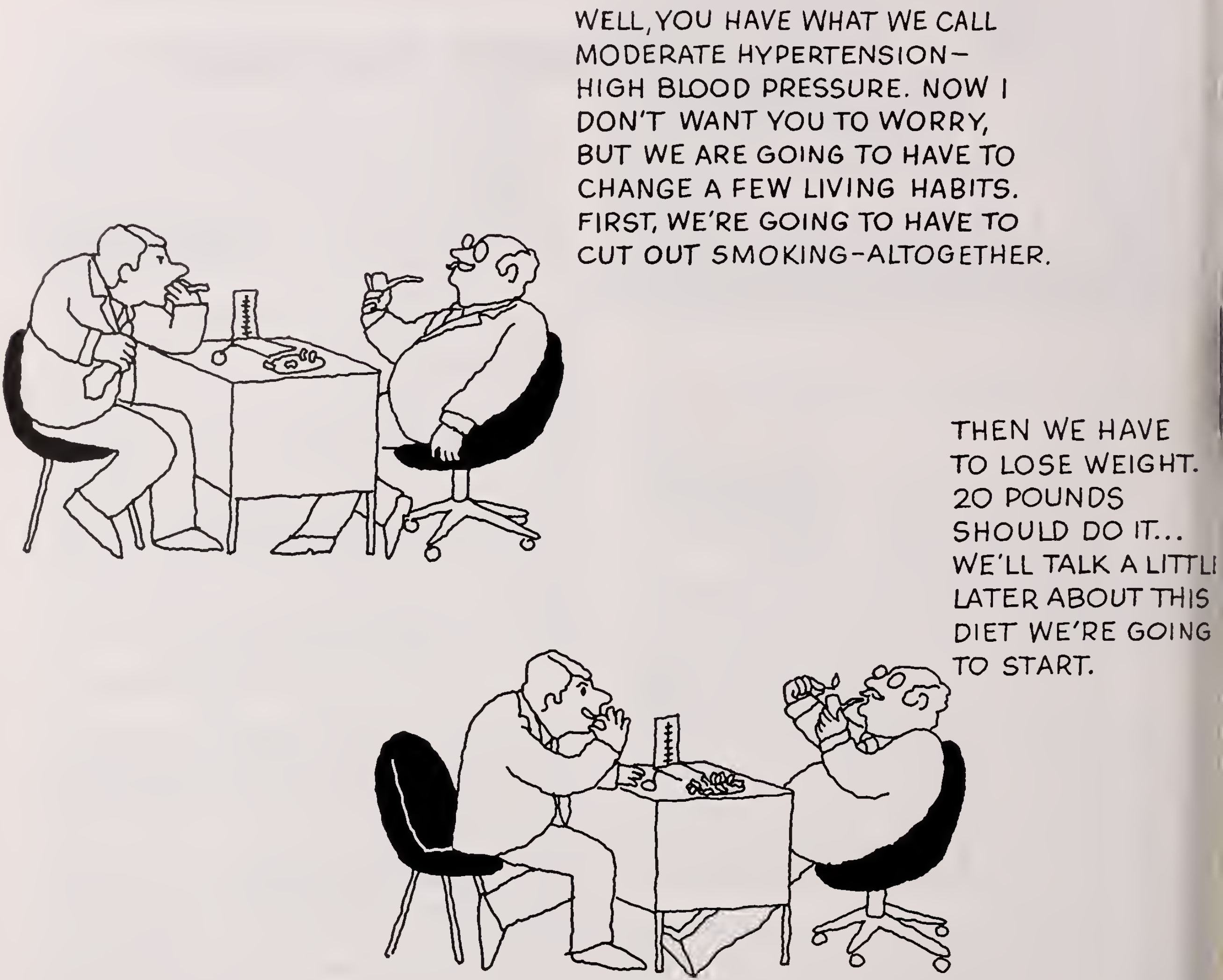
Quotations from various authorities often begin the chapters or sections of the book and are quite delightful. Quotations from the writings of W. C. Alvarez and F. J. Ingelfinger are frequently noted.

The author is not fearful of controversy as indicated by his handling of the use or misuse of multiple transfusions in the bleeding peptic ulcer patient.

The general family physician might well use this book because it discusses quite lucidly and rationally therapy in the various conditions which are commonly met in all sorts of practice. It is also a brief review of the subject for the student in medical school and should be found in every hospital library.

IRVING B. BRICK, M.D.

The Apprehensive Hypertensive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respiratory secretions, nasal congestion, cyanosis and anorexia
occur in infants born to reserpine-treated mothers. *Precautions:* Ant
pertensive therapy with this drug should always be initiated cautio
in postsympathectomy patients and in patients receiving ganglic
blocking agents, other potent antihypertensive drugs, or curare. Red
dosage of concomitant antihypertensive agents by at least one-half
avoid hypotension during surgery, discontinue therapy with this a
two weeks prior to elective surgical procedures. In emergency surg
use, if needed, anticholinergic or adrenergic drugs or other suppo
measures as indicated. Because of the possibility of progressio
renal damage, periodic kidney function tests are indicated. Disconti
if the BUN rises or liver dysfunction is aggravated. Hepatic coma
be precipitated. Electrolyte imbalance, sodium and/or potassium
pletion may occur. If potassium depletion should occur during ther
the drug should be discontinued and potassium supplements gi
provided the patient does not have marked oliguria. Take particular
in cirrhosis or severe ischemic heart disease and in patients recei

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steroids, ACTH, or digitalis. Severe salt restriction is not recom-
d. Use cautiously in patients with ulcerative colitis or gallstones
colic may be precipitated). Bronchial asthma may occur in
tible patients. *Adverse Reactions:* The drug is generally well
ed. The most frequent side effects are nausea, gastric irritation,
g, diarrhea, constipation, muscle cramps, headache, dizziness
ute gout. Other potential side effects include angina pectoris,
, depression, bradycardia and ectopic cardiac rhythms (espe-
hen used with digitalis), drowsiness, dull sensorium, hypergly-
and glycosuria, hyperuricemia, lassitude, restlessness, transient
, impotence or dysuria, orthostatic hypotension which may be
ated when chlorthalidone is combined with alcohol, barbiturates
otics, leukopenia, aplastic anemia, skin rashes, thrombocyto-
agranulocytosis, nasal stuffiness, increased gastric secretions,
are, purpura, urticaria, ecchymosis, weakness, uveitis, optic
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Doctors Hospital Number

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The Use of the Scintillation Camera in Organ Scanning

OSCAR B. HUNTER, JR., M.D.,* AND NELLIE M. BERING, M.A.†

IN RECENT YEARS the scintillation camera developed by Anger has come into practical clinical use and can now be used on a daily basis for scanning procedures in the identification of tumors and space-occupying lesions in organs previously scanned by rectilinear machines. The camera operates according to the following principle.

Gamma radiation, originating in the organ being viewed, strikes the crystal and produces a scintillation or photon of light. Only perpendicular gamma rays strike the face of the crystal due to the collimator. Thus the scintillations produced in the crystal will occur in the same relative position as the gamma rays originating in the organ.

The photon of light is transmitted to the photomultiplier tubes (19 in hexagonal array) by means of a light pipe to the imaging positioning network matrix (computer) to a corresponding position on the cathode ray tube. The event produces 4 signals which are summed to a Z-pulse. A series of windows are set into the circuit to accept those photopeak energies of the nuclide being used. If the scintillation satisfies this condition and passes through the window, the Z-pulse will be displayed on the x and y axis of the cathode ray tube in its corresponding position within the organ. This is displayed on a film.

This photographic principle thus develops a relatively accurate identification of the organ as well as of the lesions which replace normal tissue. To date, the camera has been used for photographing brain, lung, liver, spleen, and kidney lesions. The pancreas can also be visualized by this technique, and the pictures which are produced are quite accurate and are clinically useful. The camera requires much less time to obtain its photographic information from different aspects and views than does the rectilinear scanner from 1 or 2 views. The pictures are developed from a photographic film plate which is exposed to the energized particles of the oscilloscope. The pictures are exposed over a period of 5 seconds or longer producing a picture in which organs can be identified. Blood flow can also be identified, and blood-flow studies can be done by time lapse exposure techniques.

The use of the camera requires, as a rule, more active radiation than that used in other techniques. ^{99m}Technetium has been the material used more frequently than any other because of its low energy and high activity with a short physical half-life. It has a biologic half-life of 3 days and gives an exposure to the body of approximately 100 millirads total body irradiation, while the critical organs, the gastrointestinal tract and the colon, usually receive a maximum irradiation of 1 to 2 rads. This is with a total dose of 10 millicuries of ^{99m}Tc.

The following cases are illustrative of the use of the scintillation camera. The associated photo-

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* Director, Oscar B. Hunter Memorial Laboratory, 915 Nineteenth Street, N.W., Washington, D. C. 20006.

† Registered Medical Technologist and Registered Nuclear Medical Technologist (American Society of Clinical Pathologists), Oscar B. Hunter Memorial Laboratory.

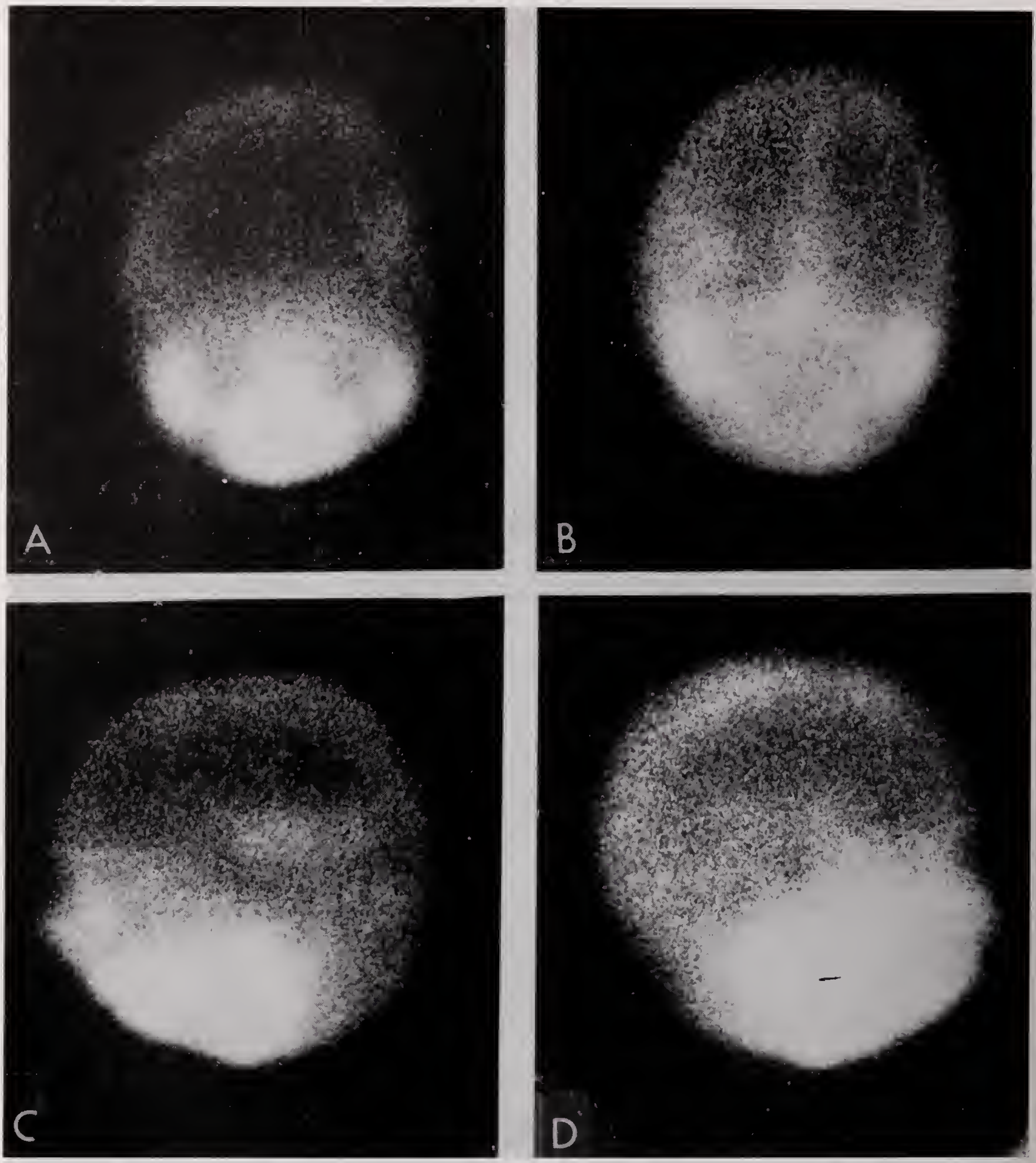

FIG. 1. Case H. O. 10 mCi ^{99m}Tc brain scintiphoto showing an elliptical area of increased activity in the left parietal lobe (C). This is seen in the A-P view, left side (A), the P-A view on the left side (B), and on the right lateral (D).

graphs are representative of the material which is obtained from these procedures.

Discussion

The illustrative cases shown in the figures identify different lesions in various organs. The brain image does demonstrate a clearly defined area indicating increased uptake of ^{99m}Tc. This was later identified as an area of infarction. These views required a recording time on the oscilloscope of approximately 7 minutes. Figure 1 is quite clear and easily identified, and with the reduced time exposure a significant amount of time is saved. Brain tumors are easily identifiable and demonstrate an improved time factor. Hematomas, which occupy space without vascularity,

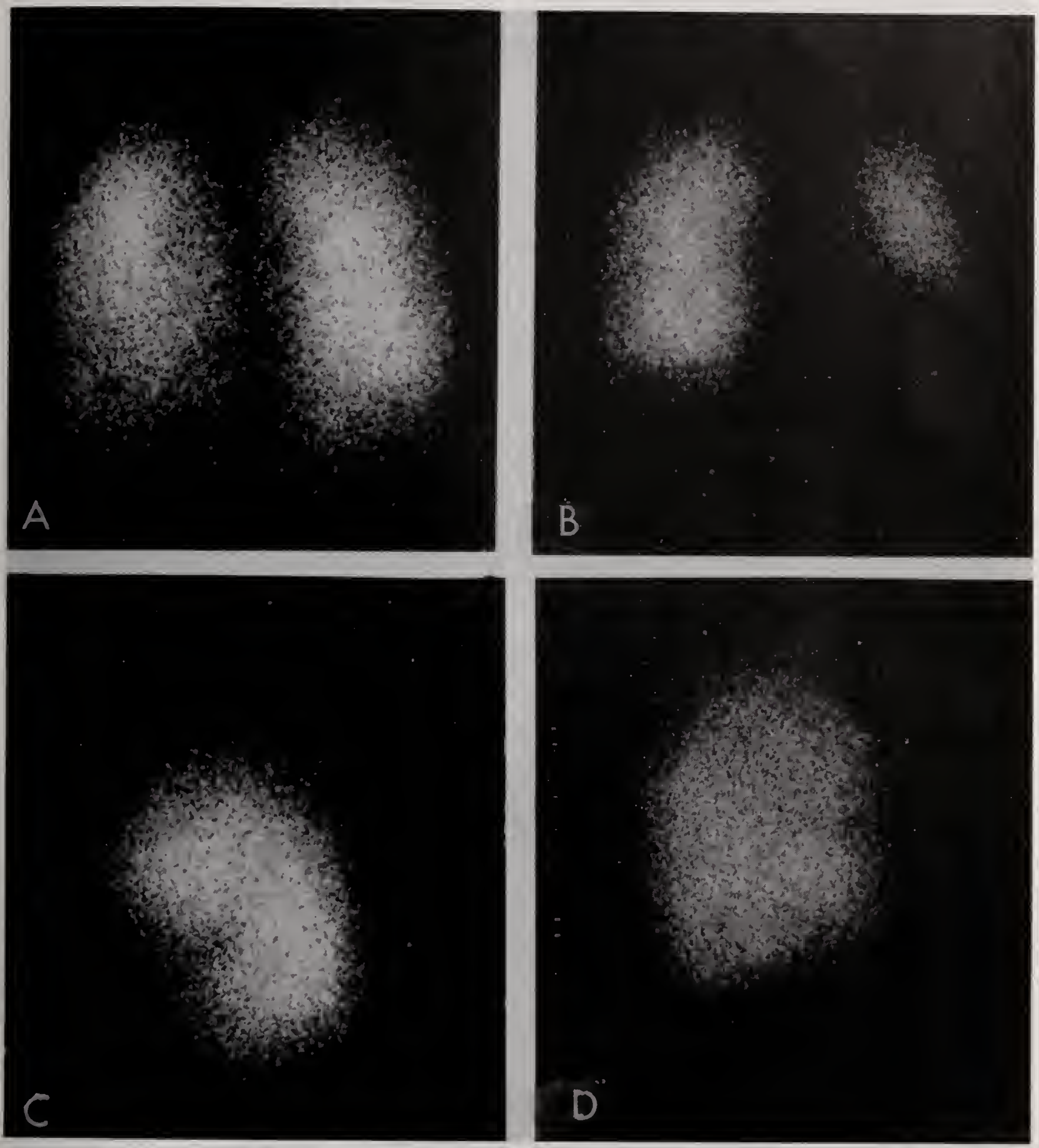

FIG. 2. Case L. B. Lung scintiphoto begun immediately after injection of 200 μCi ^{131}I MAA. There are multiple peripheral defects in the anterior portion of the right upper lobe as seen in the right lateral view (D) and in the P-A view (A) and A-P view (B). The left lateral (C) shows peripheral defects (alteration of pulmonary perfusion and emboli). Enlarged cardiac shadow (B).

both subdural and intracerebral, appear as negative shadows and as displacement of vascular channels which are readily noted in the image.

Figure 2 is a bilateral representation of the lung. Both lungs are clearly outlined in the A-P picture. The lateral scan of the left lung shows an area of infarction in the lower lobe with the reduced uptake of the ^{131}I-tagged albumin. In these 2 views the required exposure was approximately 800 seconds. Slight areas of reduced uptake can be seen.

Figure 3 reveals evidence of tumor in the liver. These were multiple views taken with ^{198}Au. The time exposure was 25 minutes. ^{198}Au has less activity than ^{99m}Tc, but it still has sufficient activity to show detail as far as liver parenchyma is

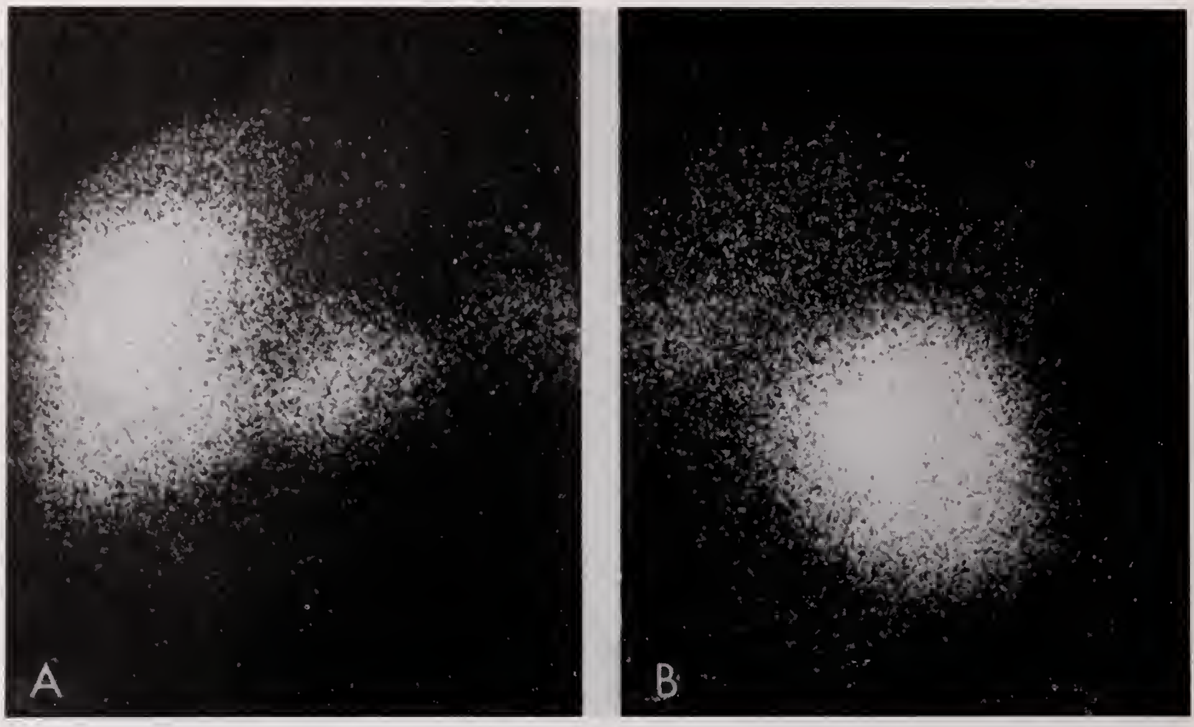

FIG. 3. Case J. T. Liver scintiphoto begun 30 minutes after injection of 125 μCi ^{198}Au. Liver image A-P view (A) shows decreased area of radioactivity at junction of the right and the left lobes. The right lateral view (B) shows uniform uptake. Posterior to the liver is an area of scattered radioactivity which is the left lobe. The defect in A is suggestive of neoplastic replacement.

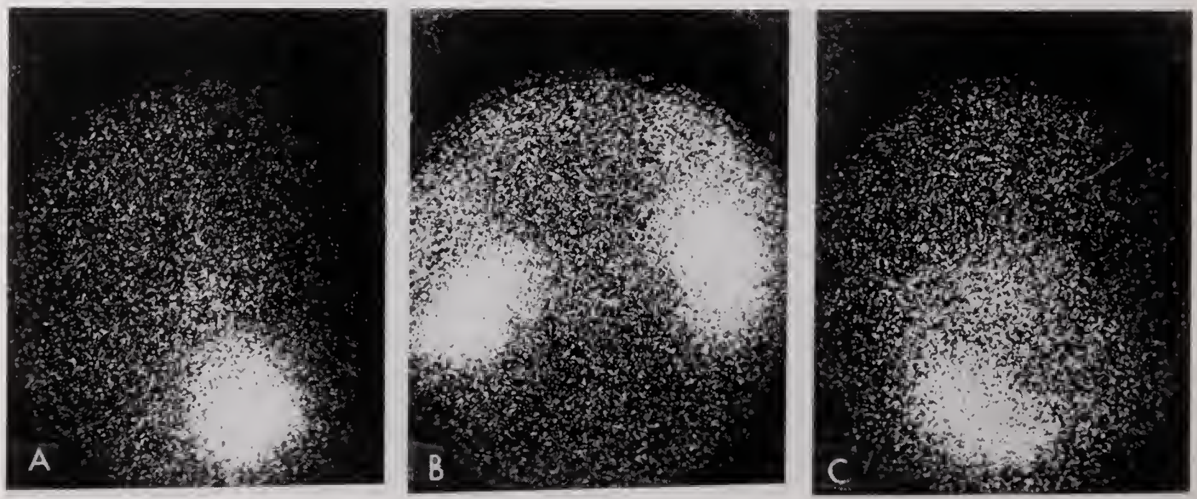

FIG. 4. Case B. H. Renal scintiphoto with 100 μCi ^{197}Hg. The upper pole of the right kidney as seen in P-A view (B) and in the right lateral view (C) shows a slight decrease in concentration. The left kidney as seen in the P-A view (B) and in the left lateral view (A) shows a decrease in overall size. The upper pole of the left kidney shows a decreased uptake of radioactivity indicating chronic renal disease or a mass lesion. Patient had stone removed from left kidney.

concerned. Liver pictures taken with the camera permit recognition of displacement of the liver. Changes in liver function along with space-occupying lesions including tumors and abscesses can be identified with diffused reduced uptake. Little time is conserved in using ^{198}Au for the liver since both the camera and the scanner, with a 5-inch crystal, take approximately the same amount of time.

Pictures of the pancreas can be taken with the use of ^{75}Se-tagged methionine. There is improvement in the image of the pancreas. Very fre-

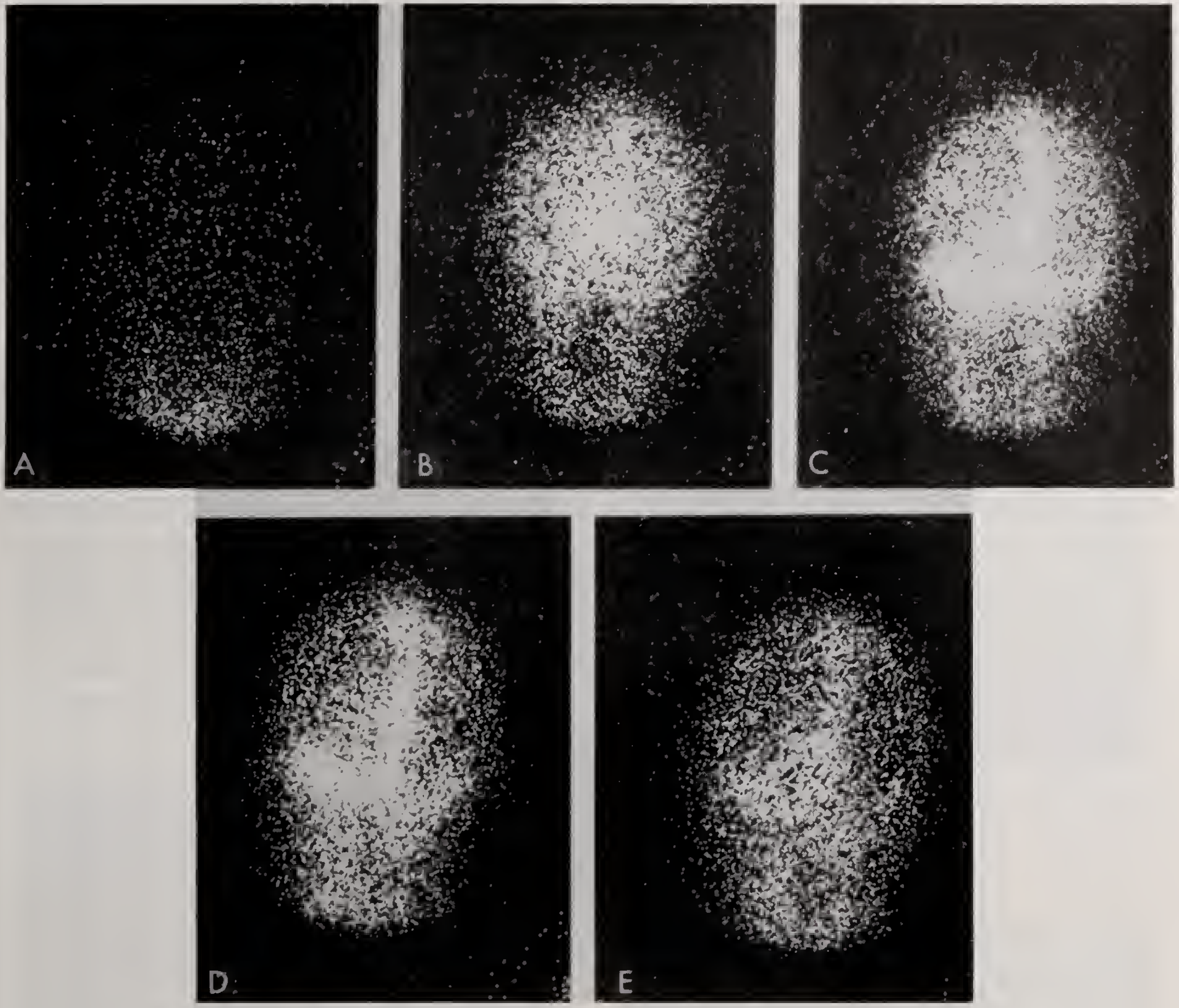

FIG. 5. Case H. O. Rapid cerebral blood-flow studies. Posterior view sequence after intravenous injection of 10 mCi ^{99m}Tc: (A) 4–8 seconds; (B) 8–12 seconds; (C) 12–16 seconds; (D) 16–20 seconds; (E) 20–24 seconds. This is a 4-second sequence and shows the arterial perfusion into the saggital, transverse, and sigmoid sinuses. The 12–16 second scintiphoto (C) shows a decreased flow into the transverse sinus on the right side. This is seen on the following sequences.

quently this needs to be compared with a scan of the liver in order to more clearly identify the borders of both organs. Defects in the head and body of the pancreas are often identified with this technique. The camera reduces the time to approximately 1 hour.

Pictures of the kidney in figure 4 reveal a clear outline of the organ. In addition, some concept of its function, space-occupying lesions, displacement, and vascular accidents can be identified by means of ^{197}Hg.

Bone pictures can be made with the camera. ^{85}Strontium is used by both the camera and the scanner. These techniques have similar time exposures. With the variety of views available, these are relatively static pictures, but they contribute a number of new views in a reasonably short period of time.

An additional parameter which is not available with the scanner and which is offered by the camera is blood-flow studies. Figure 5 is a series of views of the brain and vasculature of the head showing the degree of blood flow at 4-second intervals. This permits the identification of different functions of the vascular tree, vascular abnormalities, and any major alteration of blood flow, such as that produced by thrombosis or a space-occupying lesion. Tumors will be identified at a later time when the outflow of the vasculature has been passed. This added possibility grants greater availability of information and should be of great

(Continued on page 606)

Roentgenologic Aspects of Meckel's Diverticulum

KARL C. CORLEY, M.D.*

MECKEL'S DIVERTICULUM differs from all other outpouchings of the small gut because of its embryologic origin as a sacculation resulting from failure of complete obliteration of the yoke stalk during fetal life. Owing to its primitive origin it frequently contains heterotopic tissues far removed from their normal locations, such as gastric mucosa and occasionally pancreas. It is found in approximately 2 per cent of all autopsies in many series.

Boyd's "Surgical Pathology" lists 6 complications of these diverticula which are relatively frequent:

1. Closure of communication between the lumens of the diverticula and of the adjacent gut with cyst formation possibly leading to rupture.
2. Acute inflammation when the opening of the diverticulum into the gut is narrowed with symptoms like appendicitis.
3. Internal hernia of the small gut resulting from adhesions of the sac with creation of a tight loop.
4. Volvulus initiated by the abnormal weight of the sac.
5. Peptic ulcer, often with bleeding, from heterotopic gastric mucosa.
6. Intussusception caused by an inverted diverticulum.

To these the recent literature has added other complications. Calcification of the wall of these cysts renders them visible roentgenologically but are not usually serious. Fecaliths, however, lying in the lumen of a Meckel's diverticulum are fully as dangerous as those in an appendix from the standpoint of erosion, perforation and peritonitis.[1] A case of Meckel's diverticulum stone ileus has been reported.[2] The surgical journals contain many references to neoplasms of these diverticula such as carcinoid, leiomyosarcoma, villous adenoma, and adenocarcinoma.[3,4,5]

These diverticula are troublesome in children usually because of mechanical problems incident to their presence, and it is in them that they cause volvulus and intussusception.[6] Young children may, however, bleed from the gastric mucosa or pancreatic tissue which may be present.

The preoperative and antemortem diagnosis of Meckel's diverticulum is usually missed. Even when roentgenologic evidence of such is present its detection usually goes by default until the films are reviewed in the light of operative or autopsy findings. Several factors bring about this failure to include the possibility in the differential diagnosis and leave them unsuspected clinically and roentgenologically. This is naturally the result of the 2 per cent incidence. The usual techniques of various radiologic procedures such as small-bowel studies and barium enemas operate frequently to obscure the presence of these sacs. Many cannot be visualized by any method.

Meckel's diverticula vary in size from a minimum of 1–2 cm. up to giant sacs with a lumen of 10–15 cm. in diameter. Because of their anatomic characteristics the plain abdominal film may disclose them to the alerted interpreter. A persistent gas shadow which retains its shape and with only limited changes of position in repeated films should excite suspicion (figures 1 and 2). Calcific shadows in the same general area of the lower central abdomen are not always in mesenteric nodes. Diffuse calcification of the diverticular wall should be easily recognizable. Ileus from an extruded diverticular stone would be difficult to separate from gallstone ileus, although if a stone is seen without bile-duct gas the possibility should be considered.

Most of the roentgenologic diagnoses of these diverticula occur during barium studies of the intestinal tract, and the small-bowel study uncovers the greater part of these. The sacs are, however, filled by reflux into the terminal ileum during barium enema occasionally (figures 3 and 4). Since these sacs usually are found at 30 cm. or more proximal to the ileocecal valve most fluoroscopists regard such extensive filling of terminal ileum as unfortunate. In order not to obscure the sigmoid colon during barium-enema study radiologists usually avoid any reflux beyond the terminal few cm. of ileum if possible. This unquestionably reduces the yield of diagnoses of Meckel's roentgenologically.

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* From the Department of Radiology, Doctors Hospital, 1815 Eye Street, N.W., Washington, D. C. 20006.

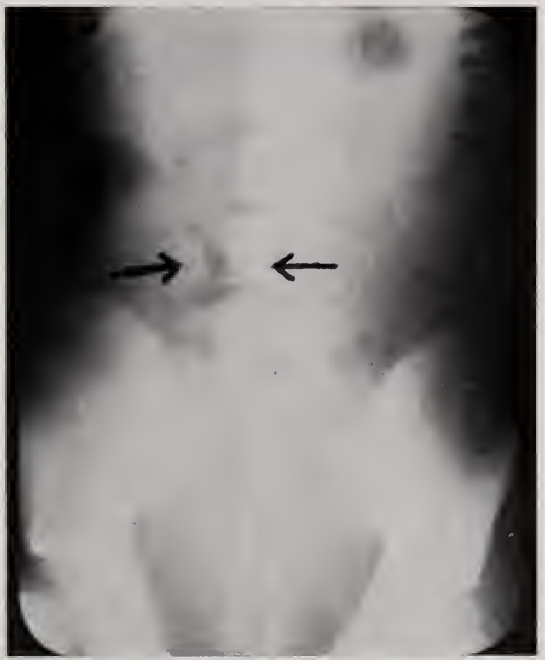

FIG. 1. Persistent crescentic gas shadow in right midabdomen, outlining lumen of Meckel's diverticulum (arrows).

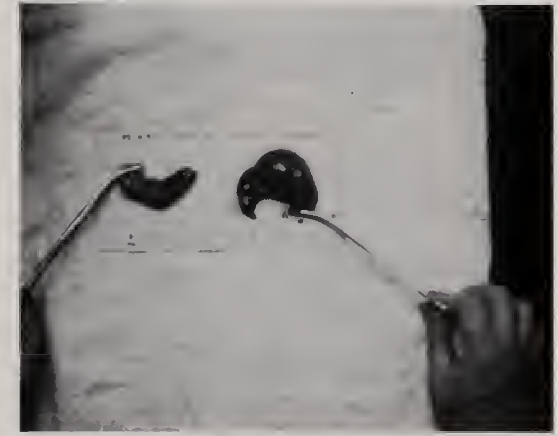

FIG. 2. Same case as in figure 1, the operative specimen.

Small-bowel studies carried out currently are pointed toward the diagnoses of diffuse small-bowel diseases such as malabsorption syndrome, granulomatous ileitis, lymphoma, etc. Writers on these ailments stress the need for large quantities of barium by mouth, and some perform the so-called small-bowel enema by intubation. The tendency is to accomplish outlining of the entire small intestine simultaneously as quickly as possible. Then, having scanned the length of gut from pylorus to terminal ileum, the subject is dismissed. In our experience the optimal time to find Meckel's diverticulum is when the last 10 per cent or the tail of the meal is in the terminal ileum. With the voluminous amounts of barium often used this may require an excessively long period of observa-

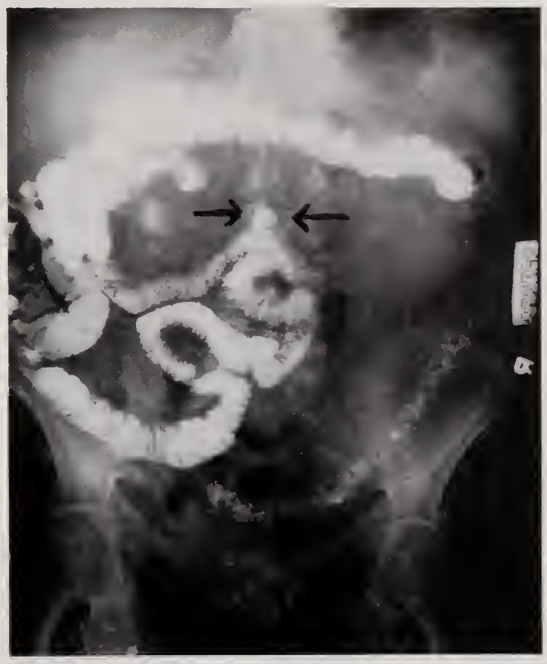

FIG. 3. Characteristic Meckel's diverticulum outlined by reflux into terminal ileum during barium enema (arrows).

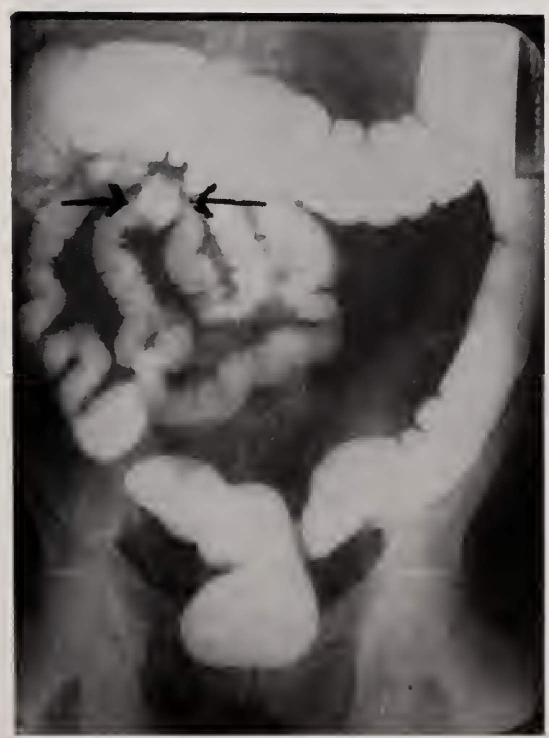

FIG. 4. Meckel's diverticulum outlined by unusually extensive reflux during barium enema (arrows).

tion with growing impatience on the part of the subject and examiner.

In recent years finely milled forms of barium with suspending agents have become available. These progress rapidly through the intestinal tract in the absence of stasis or obstruction, and, because of increased fluidity, will usually outline the entire small gut with much smaller quantities than were previously necessary. This in turn permits completion within a reasonable period of hours. The small gut is adequately outlined, and the tail of the meal will almost always be found in the terminal ileum with judicious stimulation.

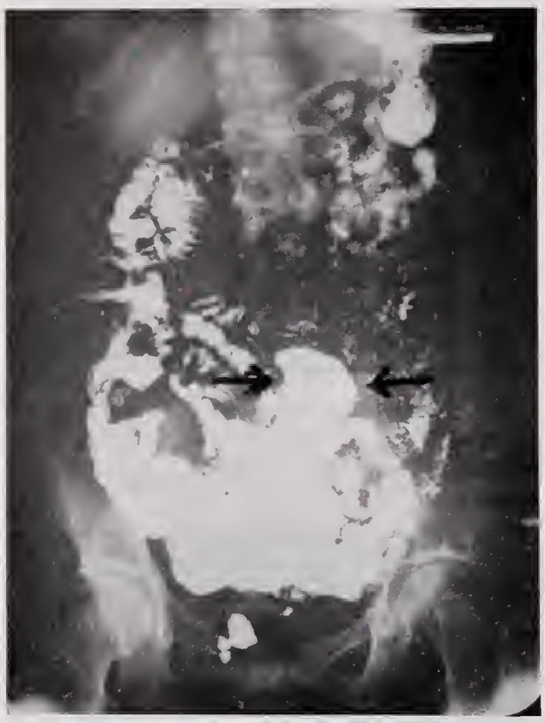

FIG. 5. Large Meckel's diverticulum first seen during early phase of small-bowel study (arrows). See also figures 6 and 7.

A recommended procedure for small-bowel study might be outlined as follows. The patient is asked to drink the usual amount of barium for study of the esophagus, stomach, and upper small bowel. When these segments have been inspected more barium up to 300 c.c. is given, and the progress of the meal is checked at intervals of 15 to 30 minutes depending upon the speed with which the head of the meal moves. The condition of various segments of the gut is determined by fluoroscopy and films as they become outlined. If the stomach is slow to empty in the first interval the patient may be placed in a comfortable position on the right side. If the initial meal appears to be inadequate more may be given to create a continuous stream until the entire length of small

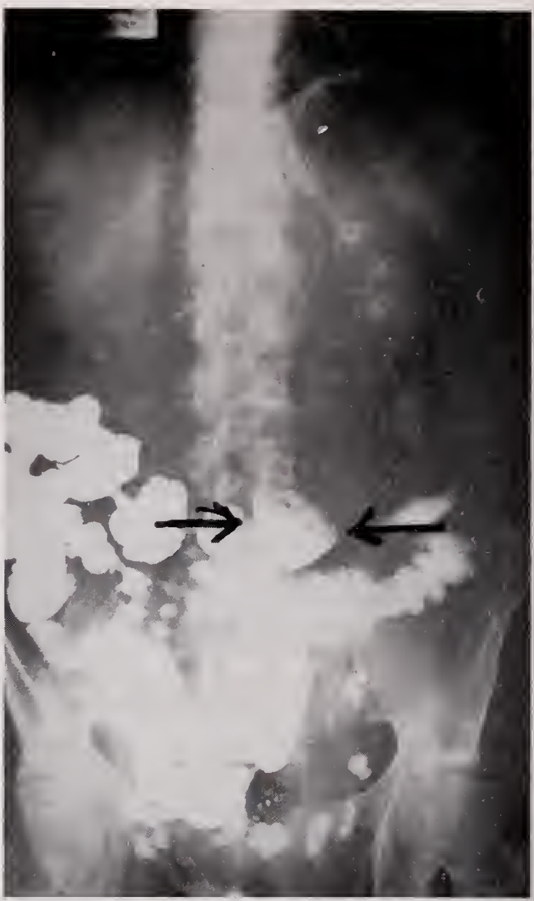

FIG. 6. Same case as in figure 5. Sac persists at midpoint of small-bowel study (arrows).

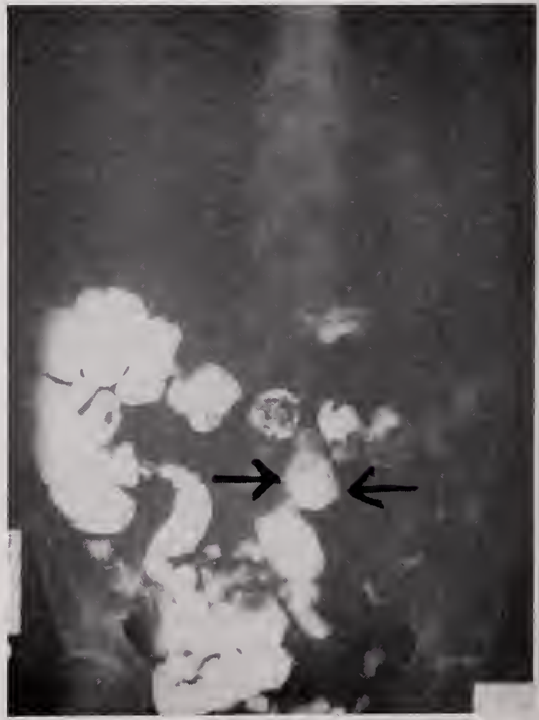

FIG. 7. Same case as in figures 5 and 6. Sac still outlined and showing double shadow suggesting ulcer as last of meal lies in terminal ileum (arrows).

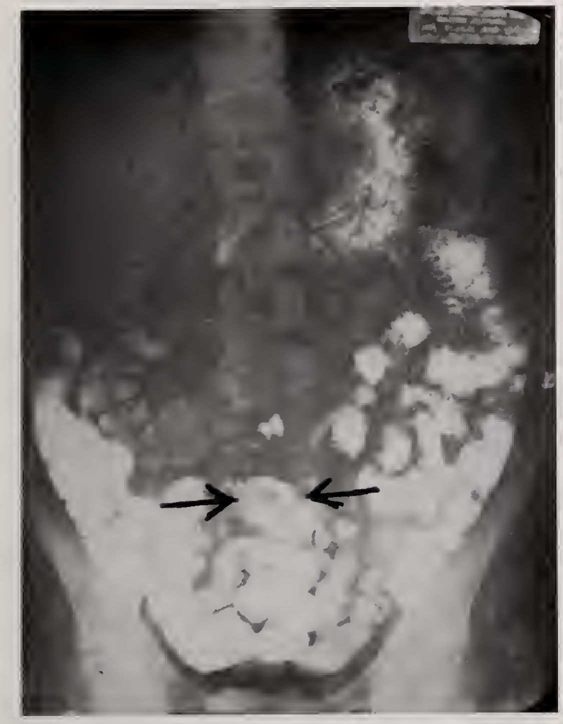

FIG. 8. Negative shadow or filling defect produced by inverted Meckel's diverticulum (arrows). See also figure 9.

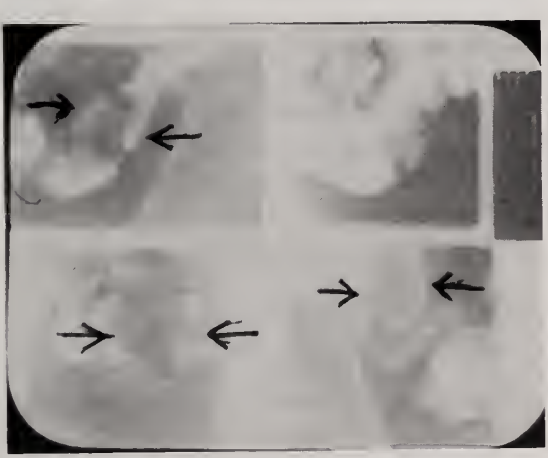

FIG. 9. Spot-film detail of same case as in figure 8 (arrows).

bowel is filled. At this point ice water up to 250 c.c. will hasten the progress of the meal in most cases. If this fails, nourishment including warm liquids usually proves stimulating and will probably be very agreeable to the patient.

Abnormal collections of barium which appear with the filling of the last 1–2 meters of small bowel and which persist even after the tail of the meal has cleared the gut adjacent to them must be regarded with high suspicion (figures 5, 6 and 7). Persistent filling defects or negative shadows in the barium-filled gut may betray an inverted diverticulum (figures 8 and 9). Some idea of the variety of sizes and shapes of Meckel's diverticula may be gained from figures 10, 11, 12 and 13.

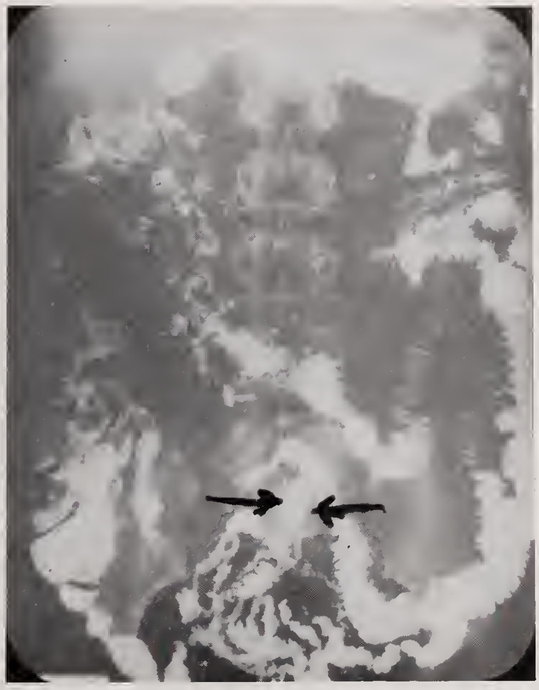

FIG. 10. Persistent unusual collection of barium in a Meckel's diverticulum on repeated films (arrows) during small-bowel study.

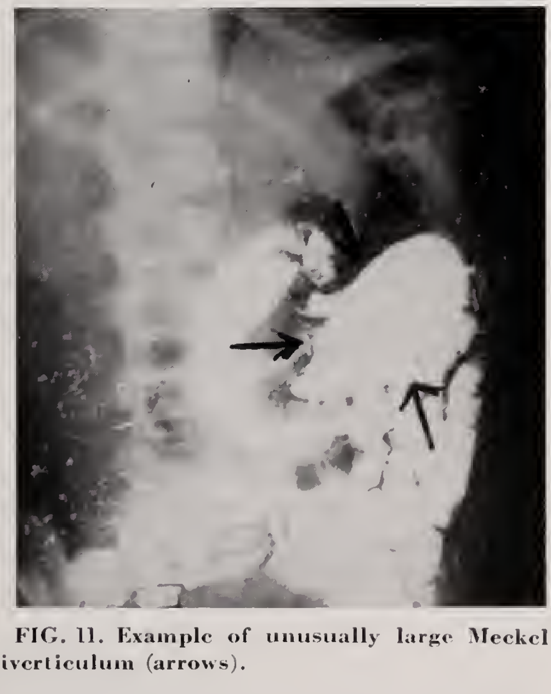

FIG. 11. Example of unusually large Meckel's diverticulum (arrows).

It is suggested that Meckel's diverticulum should be remembered as a possibility in the presence of a variety of symptoms and that the incidence of demonstration of these sacs roentgenologically can be increased.

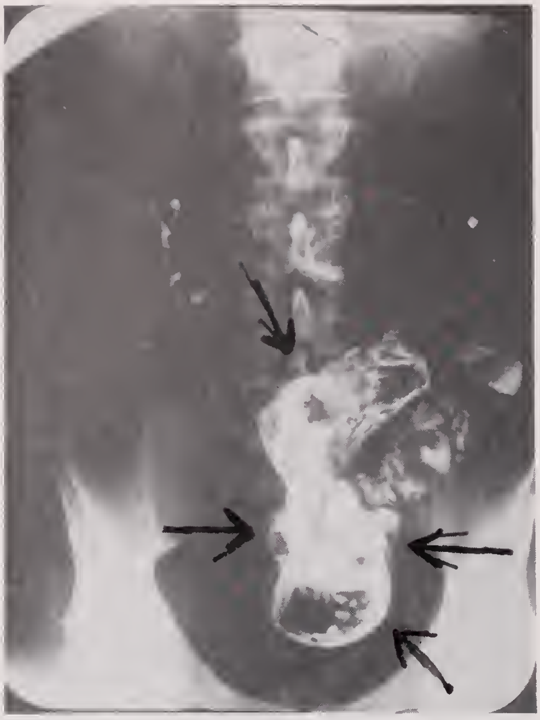

FIG. 12. Example of unusually large Meckel's diverticulum (arrows).

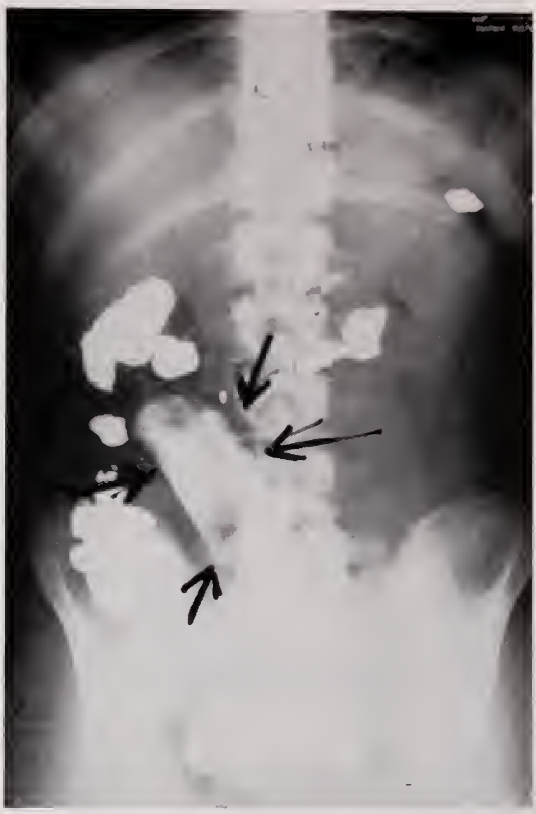

FIG. 13. Example of unusually large Meckel's diverticulum (arrows).

Summary

The embryology, anatomy and complications of Meckel's diverticula have been briefly reviewed. The difficulty of detection and the reason therefor have been mentioned. Barium studies of the intestinal tract are credited with discovery of most of Meckel's diverticula which are demonstrated roentgenologically, particularly under certain modifications and individualization.

Gratitude is expressed to Dr. John A. Long, Providence Hospital, Washington, D. C.; Dr. William A. R. Stecher, Prince Georges County (Md.) Hospital; and Dr. Robert H. Armstrong, Jr., Richmond, Va. (formerly of Annapolis, Md.) for the loan of some of the films which are reproduced.

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The Role of Oxygenation in the Etiology of Posthypercapnic Ventricular Fibrillation*

S. SLIJEPCHEVIC, M.D., PH.D.,† AND M. PAJTL, PH.D.‡

After Brown and Miller[1,2,3] reported that rapid fall in high alveolar carbon dioxide concentration could be followed by ventricular fibrillation this "posthypercapnic phenomenon" was described by other authors as well.[4,5] The possibility was suggested that this phenomenon was related to some postanesthesia circulatory failure or even cardiac arrest.[2,3] Other investigators, however, have not been able to observe ventricular fibrillation after rapid elimination of high alveolar carbon dioxide.[6-11] All authors have paid special attention to the acid-base balance, some to the electrolytes[4,5] and others to catecholamines,[8-11] but most have not studied blood oxygen tension during their experiments. In this way the role of the most important single factor in the metabolism of the myocardium, oxygen, has not been taken into consideration.

We have undertaken to study this phenomenon in experiments on dogs with special attention to the state of oxygenation during the whole experiment.

Methods

Twelve experiments were performed. Mongrel dogs received 1.0 mg. of atropine subcutaneously 30 minutes before induction of anesthesia. After infiltration of the groin with 1 per cent lidocaine a femoral artery was cannulated for removal of blood samples and recording of blood pressure with a Statham gauge, Model P23A. Lead 2 of the electrocardiogram was recorded with a Beck-Lee direct writing apparatus at intervals of 5 minutes during 120 minutes of apnea, and continuously during posthypercapnic ventilation until ventricular fibrillation occurred or the record appeared to be normal. Control blood samples were withdrawn from conscious dogs anaerobically into syringes moistened with heparin for determination of oxygen hemoglobin saturation, oxygen tension, pH, carbon dioxide content, and plasma potassium levels. Arterial hemoglobin oxygen saturation was estimated spectrophotometrically with the Elema-Schoenander instrument.[12] Oxygen tension of the arterial blood (PaO_2) was measured with a Clark platinum electrode and Trans-Tronic Systems apparatus. Whole blood pH and arterial blood plasma pH were determined with a radiometer microcapillary glass electrode and Astrup apparatus.[13] Measurements were made with electrodes kept at 38°C. All PaO_2 and arterial pH values were corrected to the temperatures of the dogs. The plasma carbon dioxide content was determined by means of the manometric method of Van Slyke and Neill.[14] The arterial carbon dioxide tension ($PaCO_2$) was estimated from the Henderson-Hasselbalch equation. Plasma potassium levels of the arterial blood were obtained by flame photometry with an EEL, model A apparatus.

After control blood samples were taken the dogs were anesthetized with intravenous thiopental, made apneic with intravenous injection of succinylcholine, and the trachea intubated with a no. 10 cuffed Magill tube, and intermittent positive pressure ventilation was begun with oxygen in a to-and-fro semi-closed system and a flow of 5 liters of oxygen per minute. Light anesthesia was maintained with small increments of thiopental, and apnea was maintained by additional intermittent doses of succinylcholine. After 20 minutes of ventilation with oxygen the cuff of the endotracheal tube was deflated and intermittent compression of the reservoir bag was stopped, while insufflation of oxygen into the trachea in a flow of 5 per minute was continued. Elimination of carbon dioxide was so prevented and oxygenation maintained.[15] Holmdahl[6] has shown that tracheal insufflation is comparable to apneic oxygenation with respect to carbon dioxide accumulation. Arterial blood samples were obtained after 15, 45, and 120 minutes of apnea. An equal volume of normal saline was replaced after each blood sampling. After 120 minutes of apnea the ventilation of the lungs with 100 per cent oxygen was resumed in order to obtain elimination of CO_2; then a blood sample was taken after 5 to 10 minutes of ventilation.

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* This work was begun at Doctors Hospital, Washington, and continued at the University of Zagreb, Yugoslavia.

† Address: Doctors Hospital Research Foundation, 1815 Eye Street, N.W., Washington, D. C. 20006.

‡ Address: University of Zagreb, Zagreb, Yugoslavia.

Results

Results are presented in tables*. The only criteria for dividing our experimental animals into 2 groups were difference in arterial oxygen saturation and PaO_2 in the samples drawn after 120 minutes of respiratory acidosis. All animals included in table 1 had oxygen saturation values less than 86 per cent and PaO_2 values less than 134 mm. Hg, with respective means of 62 per cent and 91 mm.Hg in the last drawn in-apnea sample. After 45 minutes of apnea mean arterial oxygen saturation in this group was 81 per cent and mean PaO_2 126 mm. Hg. Table 2 comprises the animals in which minimum arterial oxygen saturation was 93 per cent and PaO_2 171 mm. Hg before the elimination of CO_2 was started by manual ventilation of the lungs with 100 per cent oxygen. We can see that during the insufflation of oxygen into the trachea of the dogs which are apneic, in most cases there is a steady fall in oxygen saturation and PaO_2. This fall is mainly the result of atelectasis that develops during apnea, as was seen in the postmortem examinations of our dogs.

Fifteen minutes of apnea lowered the mean pH of arterial blood in dogs presented in table 1 to 6.84. After 120 minutes it was 6.47. $PaCO_2$ showed a corresponding rise to mean 357 mm. Hg after 120 minutes of apnea. These results are in agreement with those of other authors who have obtained respiratory acidosis by means of apneic oxygenation.[6,10] There was also an increase in plasma potassium of 0.98 mEq./L from the control value after 120 minutes of respiratory acidosis.

In 6 of 8 dogs in this group ventricular fibrillation occurred within 5 to 15 minutes after the ventilation of the lungs with oxygen was reëstablished. The onset of fibrillation was preceded by broadening of the QRS complex and ventricular tachycardia in most cases. The mean values of arterial oxygen saturation and PaO_2 at this moment were 95 per cent and 260 mm.Hg respectively. Average pH rose to 7.03 and $PaCO_2$ fell to 67 mm.Hg. The plasma potassium showed a further rise for 1.20 mEq./L in this posthypercapnic period.

Animals included in table 2 had the mean arterial oxygen saturation of 96 per cent and PaO_2 205 mm.Hg after 45 minutes of apnea. After 120 minutes these values were 95 per cent and 209 mm.Hg respectively. The fall of pH in this group was very similar to that in the animals in table 1. The mean values for pH were 6.87, 6.66 and 6.51 after 15, 45 and 120 minutes of apnea. The rise of $PaCO_2$ was from 136 after 15 minutes to 334 after 120 minutes of CO_2 accumulation. The increase in plasma potassium level over the control value after 120 minutes of apnea was 0.46 mEq./L in this group. After the ventilation of the lungs with oxygen was established again the mean pH rose to 7.01 within 5 minutes and $PaCO_2$ was lowered from 334 to 74 mm.Hg. There was a further increase in potassium level after the elimination of CO_2 was achieved by ventilation of the lungs for 1.24 mEq./L, which is almost identical with that in the previous group. However, all animals in this group survived. Only 1 showed broadening of the QRS complex during this posthypercapnic period.

Blood pressure changes in both groups are presented in tables 3 and 4. There is first a rise and then a fall in both systolic and diastolic blood pressures. After 45 minutes of apnea the blood pressure was still above the control values. With the onset of ventilation and CO_2 elimination the blood pressure in the hypoxic group comes to zero within 1 to 3 minutes, while in the well-oxygenated group there is a further significant fall over the controls.

Discussion

In their experiments in which 11 out of 17 dogs died after they were changed from high carbon dioxide to air Brown and Miller[2] did not measure hemoglobin oxygen saturation or oxygen tension. To examine whether anoxemia played any part in this phenomenon they hyperventilated 2 dogs with oxygen instead of with air after a period of respiratory acidosis, and because both dogs died they concluded that anoxemia did not play any role.[3] Millar[8] ventilated his dogs with oxygen after 60 minutes of apnea and could not observe the occurrence of ventricular fibrillation. However, 2 of 3 dogs in which he measured arterial oxygen saturation prior to the onset of ventilation of the lungs had values of 92 and 94 per cent, while in the third it was 87 per cent. In one experiment in which Millar et al[9] did have acute circulatory collapse in the posthypercapnic period, arterial oxygen saturation before the elimination of carbon dioxide was 57 per cent. Frumin et al[7] examined the tolerance of human subjects to high carbon dioxide tensions by the method of apneic oxygenation. They observed ventricular tachycardia in only 1 of their subjects after the institution of atrificial respiration and carbon dioxide elimination. The lowest arterial oxygen saturation in their patients before the institution of respiration was 98 per cent.

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* Available from Dr. Slijepchevic upon request.

We ventilated all of our dogs with 100 per cent oxygen after they had been apneic for 2 hours and kept alive by intratracheal insufflation of oxygen. After the high carbon dioxide tension was lowered and pH raised by means of ventilation of the lungs, ventricular fibrillation occurred in 6. All 6 had been hypoxic prior to the elimination of CO_2. On the contrary, ventricular fibrillation did not occur in any of the dogs that had not been hypoxic in the period preceding the elimination of carbon dioxide. Brown[16] pointed out that if periods of the hypercapnic acidotic state lasted for only 15 to 30 minutes, elimination of carbon dioxide was not followed by ventricular fibrillation. In other experiments not described in this paper we have seen ventricular fibrillation occur upon elimination of CO_2 in dogs which were apneic for only 30 to 60 minutes if they had been hypoxic in the preceding period. In well-oxygenated animals ventricular fibrillation did not occur. It is possible to see in works of different authors that ventricular fibrillation does not occur in the posthypercapnic period if adequate oxygenation is maintained in all periods.[7,8]

Plasma potassium concentration increases during hypercapnia. In the immediate posthypercapnic period there is an additional increase. Young et al[4] believed that this increase in plasma potassium level is responsible for electrocardiographic disturbances and ventricular fibrillation in the posthypercapnic period. According to Winkler et al[17] it is necessary to raise plasma potassium to 14 mEq./L in order to provoke cardiac arrest. Gordon and Jones[18] showed that in hypoxic dogs ventricular fibrillation is provoked by a much smaller increase in plasma potassium concentration than in dogs which had been in a good state of oxygenation. In our animals there was no difference in the further increase in plasma potassium levels in the posthypercapnic period of the 2 groups. Besides, an increase for 1.20 mEq./L does not seem to be high enough to provoke ventricular fibrillation.

The fall in blood pressure in the posthypercapnic period in dogs that survived is in agreement with findings of other investigators.[4,7]

The basic difference in the metabolism between the heart and skeletal muscles is an extreme intolerance to the lack of oxygen in the former. The hypoxic injury of the myocardium increases its excitability considerably. On the other hand, the change of plasma potassium level brings about a change of transmembrane action potentials of the myocardial cells, which makes ventricular muscle prone to fibrillation. We believe that it is possible to conclude from our results that the main reason for occurrence of ventricular fibrillation in the posthypercapnic period is hypoxic injury of the myocardium during hypercapnia. In hearts that have not been injured by hypoxia the elimination of carbon dioxide, rapid change of pH, and an increase in the plasma potassium level did not provoke ventricular fibrillation. It may be concluded that in well-oxygenated animals rapid elimination of carbon dioxide is not related to postanesthetic circulatory failure or cardiac arrest.

Summary

Twelve mongrel dogs were made hypercapnic for 2 hours. After rapid elimination of carbon dioxide and rise of pH, ventricular fibrillation occurred in 6 of 8 dogs that had been hypoxic during the hypercapnic period. Ventricular fibrillation did not occur in any of 4 dogs in which good oxygenation had been maintained during the hypercapnic period. It is concluded that hypoxic injury to the ventricular muscle is the main cause of cardiovascular disturbances in the posthypercapnic period.

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The Cardiovascular Response to Glucose Loads in Normal Adults and Patients with Left Ventricular Hypertrophy[*]

JAMES R. SNYDER, M.S. (MED.), M.D.,[†] AND DIANE ALABASTER[‡]

CLINICAL EVALUATION of cardiovascular performance requires an understanding of the normal physiologic changes. This becomes increasingly important as observations include a larger number of circadian events.

Previously reported studies have shown a consistent diurnal variation in measurements of cardiac function which may have been a postprandial effect.[1,2,3] If the response following a meal or glucose is measurable and consistent, the character of its effect must be demonstrated. Such information would be useful in studies of cardiac function during a time period that requires feeding and when intravenous glucose solutions are used.

In the present study oral and intravenous glucose loads have been given to evaluate the magnitude and possible mechanism of the normal postprandial response. This response, also observed in patients with hypertension and left ventricular hypertrophy, provides information regarding the effect in a clinical population.

Method

Following intravenous and oral glucose there were 252 recordings taken on 31 normal subjects and 11 patients with essential hypertension. The normal subjects were healthy and had no evidence of cardiovascular disease on history or physical examination. All patients with essential hypertension had at least 3 consecutive daily blood pressure readings over 150/90 and evidence of left ventricular hypertrophy (L.V.H.) on ECG or chest X-ray films. There was no evidence of congestive heart failure or renal disease and no history of regular or recent medication. The sex distribution was equal in all groups. Average and full-range values for age and body weight are given in table 1.

TABLE 1: Age and Weight

Groups	Weight (lbs.)	Age
Normal (10[*]), control...	143 (119–166)[†]	27 (20–41)[†]
Normal (10), oral glucose..................	141 (108–206)	27 (19–46)
Hypertensive (11), oral glucose.....	150 (120–198)	51 (32–75)
Normal (11), I. V. glucose	149 (108–262)	35 (25–55)

[*] Number of individuals.

[†] Mean (range).

After baseline recordings the individuals received glucose intravenously (25 Gm. over 3 minutes) or orally (100 Gm.). Observations were made at ½, 1, 2, and 3 hours in the intravenous group and for an additional hour (4 hours) in the normal and hypertensive groups receiving glucose orally. The normal control group received only a glass of cool water prior to the 4-hour study. All studies were begun in the morning with the subjects fasting, supine, and resting. Smoking and ambulation were not permitted.

A recording consisted of 10 consecutive cardiac cycles of a simultaneously recorded phonocardiogram, electrocardiogram and carotid pulse curve taken at 100 mm. per second paper speed, and the X, Y and Z scalar components of Frank's lead system recorded at 50 and 100 mm. per second paper speed at a sensitivity of 33 mm. deflection per millivolt of stimulus. The Electronics for Medicine DR-8 recorder and pulse-sounds microphone were used.

Measurements of the systolic time intervals and correction for heart rate were done according to Weissler and included the ejection time index (Et_I), $Q\text{-}S_2$ time index ($Q\text{-}S_2t_I$), and their alge-

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[†] From the Division of Cardiology, Doctors Hospital; office: 916 Nineteenth Street, N.W., Washington, D. C. 20006.

[‡] Research assistant to Dr. Snyder.

TABLE 2: Group Response Following Glucose Loads Expressed as Change from Baseline Values

	Patients	Dose	Hours after Dose				
			½	1	2	3	4
Heart rate (beats/min.)	10N	Control	−1 (1.0)†	−2 (0.8)	−1 (0.6)	−2 (0.6)	+1 (0.8)
	11N	IV	−3 (0.5)	−3 (0.7)	−3 (1.1)	−3 (1.1)	—
	10N	Oral	+10 (1.0)	+4 (0.8)	+7 (1.4)	+7 (1.0)	+4 (1.2)
	11LVH	Oral	+2 (0.9)	+3 (1.1)*	+1 (1.1)	+1 (0.7)	0 (1.3)
Spatial mag. max. T vector (per cent)	10N	Control	+7 (3.6)	+3 (4.4)	+7 (4.2)	+10 (4.4)	+9 (4.6)
	11N	IV	−21 (2.7)	−17 (2.9)*	−4 (3.6)	−17 (2.4)	—
	9N	Oral	−22 (7.7)*	−29 (4.0)	−34 (4.2)	−22 (4.4)	−15 (2.9)*
	11LVH	Oral	−20 (4.9)*	−20 (4.0)*	−12 (3.5)*	−5 (3.1)	+2 (4.5)
Q-Tc (msec.)	10N	Control	0 (1.6)	−3 (2.0)	+3 (1.2)	−3 (1.6)	+4 (1.8)
	11N	IV	−6 (4.5)	−8 (3.8)	−14 (4.5)	−2 (2.9)	—
	10N	Oral	+19 (8.0)	+8 (8.4)	+12 (5.6)	+14 (5.6)*	+7 (6.8)
	11LVH	Oral	+8 (5.9)	+9 (6.9)	+6 (8.9)	+5 (7.8)	0 (6.9)
Ejection time index (msec.)	10N	Control	+3 (0.6)	+2 (0.6)	0 (0.8)	+1 (0.8)	−1 (1.0)
	11N	IV	−5 (1.8)*	−12 (2.4)	−11 (2.0)*	−7 (2.9)	—
	10N	Oral	+6 (1.6)	+1 (1.2)	−3 (1.8)	−10 (1.2)	−11 (1.4)
	11LVH	Oral	+4 (1.8)	+1 (1.6)	−10 (2.5)*	−16 (4.0)*	−21 (2.7)
$Q\text{-}S_2$ time index (msec.)	10N	Control	+2 (1.0)	+1 (1.0)	+1 (1.4)	0 (1.8)	0 (1.8)
	11N	IV	−7 (1.5)*	−9 (1.7)	−5 (1.7)	−7 (2.5)	—
	10N	Oral	−4 (1.4)*	−10 (1.2)	−10 (1.6)	−11 (2.0)*	−16 (2.0)
	11LVH	Oral	−5 (1.6)*	−7 (2.2)*	−17 (2.1)	−23 (2.7)	−15 (2.2)
Preëjection period (msec.)	10N	Control	−1 (1.0)	0 (1.2)	+2 (1.4)	−1 (1.8)	+2 (1.4)
	11N	IV	−1 (1.0)	+2 (0.7)	+7 (1.1)	+2 (1.8)	—
	10N	Oral	−11 (2.0)*	−10 (1.6)*	−5 (2.0)	−2 (2.6)	−5 (1.8)
	11LVH	Oral	−8 (2.7)	−9 (2.4)*	−7 (1.8)*	−4 (2.4)	+2 (2.5)

N = Normal subjects.
L.V.H. = Hypertensive patients.
I.V. = Glucose 25 Gm.
Oral = Glucose 100 Gm.
* $p < 0.05$, and underlined values $p < 0.005$ as compared to the mean of the control group.
† Group mean (standard error of the mean).

braic difference, the preëjection period index (PEP_I). The orthogonal ECG leads were analyzed for the scalar and spatial magnitudes of the maximal R, j, j+ 40 msec., j + 100 msec., and T vectors. Time-based measurements included the P-R, Q-T, and R-R intervals made on simultaneous X, Y and Z lead recordings at 100 mm. per second paper speed. The Q-T interval was corrected for heart rate after Bazett.[4]

The individual's response was computed as a change from baseline. Individual values were averaged to show the group's response, and the variance expressed as ± the standard error of the mean. The $Q\text{-}T_c$, systolic time intervals, and serum potassium values were expressed in absolute units (milliseconds, milliequivalents, etc.), while the T-wave data were in per cent change from baseline. Significance levels were computed as the mean difference of the group's response from that of the control group by means of the Student's Test.[5]

Results

The group's response following glucose is shown in table 2. A good response with a high level of significance was noted in all of the measurements used except for the $Q\text{-}T_c$ interval.

The heart rate increased in normal subjects following oral glucose administration, and a high significance level was noted ($p < 0.001$) at ½, 1, 2, and 3 hours (table 2). No comparable effect was observed following oral glucose in the hypertensive patients (figure 1) or in the normal subjects after I.V. glucose.

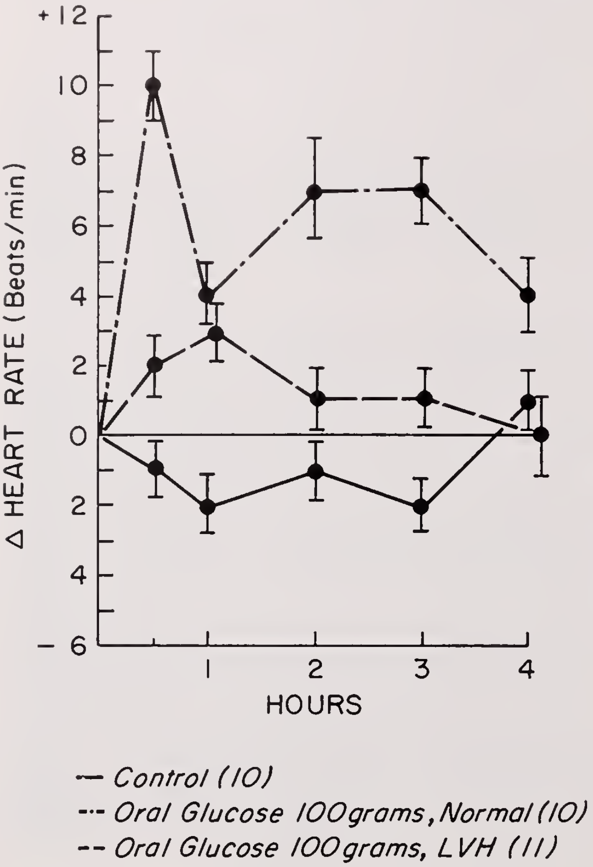

FIG. 1. Shows heart rate response of normal subjects after oral glucose was greater than that occurring in patients with L.V.H. The response following I.V. glucose in normal subjects was equivalent to the control group. Vertical bars represent the standard error of the mean.

The ejection-time index provided a good separation of the normal and L.V.H. oral glucose groups from the control group at 2, 3, and 4 hours, with a significance level of $p < 0.001$ for both groups at the 4-hour point. There was also an apparent mean difference between the Et_I response of the L.V.H. and normal group following oral glucose at 2, 3, and 4 hours (figure 2), with a significance level of $p < 0.05$ at 4 hours. Individual Et_I values are shown in table 3. After intravenous glucose the magnitude of the peak response was equivalent to that of the oral glucose group, although the Et_I was affected earlier with a maximum change apparent at 60 minutes ($p < 0.005$).

The spatial magnitude of the maximal T vector responded to the glucose loads in all groups with a high level of significance when compared to the control group (table 2). Individual values are expressed as a percentage change (table 4) because of the large range in the baseline values within any group (i.e., 0.25 mv. to 0.79 mv. for the control group). The magnitude of the effect following oral glucose was largest in the normal group, less in the hypertensive subjects (figure 3), and least marked in the intravenous glucose group of normal subjects. There was a significant difference between the normal and the L.V.H. oral glucose group's response at 2 ($p < 0.01$) and 3 hours ($p < 0.05$).

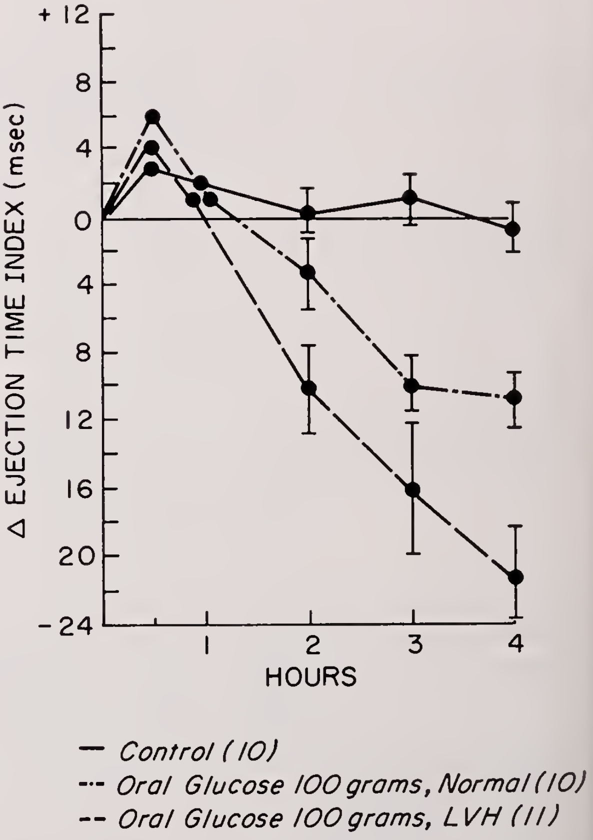

FIG. 2. Changes in the ejection time index demonstrate the response of normal subjects and patients with L.V.H. following oral glucose. Significance values are shown in table 2. The intravenous glucose effect reached a peak response of −12 msec. at 1 hour. Vertical bars represent the standard error of the mean.

The $Q\text{-}S_2t_I$ decreased in each group following glucose (table 2). The response was largest in the L.V.H. group and smallest following intravenous glucose. There was an obvious separation between the normal and L.V.H. oral glucose group's response at 2 and 3 hours ($p < 0.05$).

Measurement of the PEP_I showed a good response in the normal oral glucose group, which was maximal at 30 minutes (figure 4). No comparable response was observed in the normal subjects receiving intravenous glucose or in the hypertensive patients receiving glucose orally.

The changes in blood glucose levels following oral glucose in the normal and L.V.H. groups were equivalent (figure 5), reaching a peak at 30 to 60 minutes, with a subsequent gradual return toward the baseline. The response following I.V. glucose was greatest at 30 minutes, at which time it exceeded the peak response of the groups receiving oral glucose. At 60 minutes it had decreased to half of its 30-minute value.

Serum potassium levels are shown in table 5 for the L.V.H. group following oral glucose. The individual values show a tendency for the serum K^+ to decrease from baseline during the glucose effect. Data collected from the I.V. and normal oral glucose groups were not large enough to be statistically significant.

The Q-Tc did not provide a good separation between the control and dosage groups, and the variance was large. It was interesting to note that the Q-Tc duration tended to increase in the normal subjects receiving oral glucose, while it usually decreased in duration following I.V. glucose (table 2).

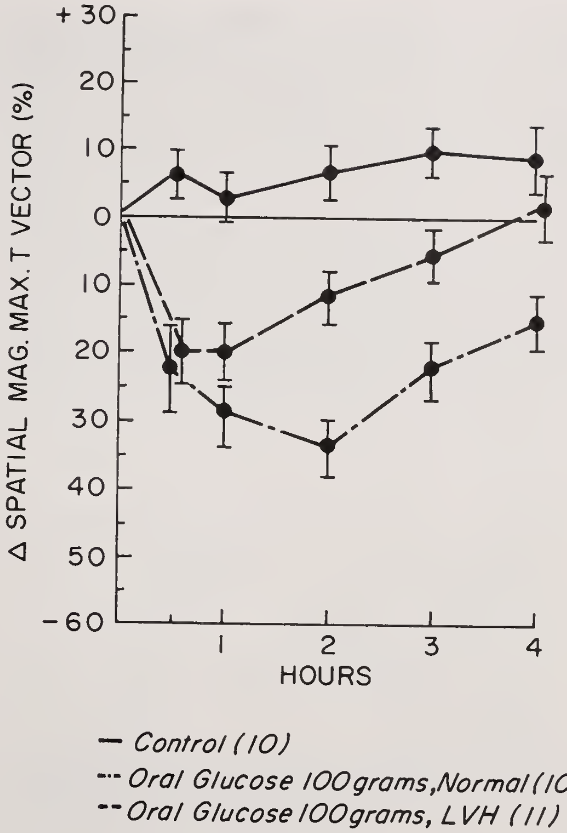

FIG. 3. Description of differences in the effect of oral glucose on the T wave of normal and L.V.H. groups compared to that of the control. Vertical bars represent the standard error of the mean.

TABLE 3: Ejection Time Index

Individual values expressed as change in milliseconds from baseline following glucose.

Patients	Control (N)					Oral Glucose (N)					Oral Glucose (LVH)					IV Glucose (N)			
	½	1	2	3	4*	½	1	2	3	4	½	1	2	3	4	½	1	2	3
1	+5	+8	+2	0	−5	+10	+2	−11	−2	−12	+7	+5	−7	0	−22	−25	−46	−38	−45
2	−3	+3	−3	−6	−7	+12	+9	−13	−10	−16	−11	−7	−6	−27	−18	+9	+3	−4	−15
3	+7	0	+5	+6	+5	+9	−10	+4	−10	−8	+5	+12	−5	−8	−24	−6	−15	−9	−7
4	+3	+2	0	+2	+2	+4	+3	+15	−1	−15	+12	+5	−12	−3	−7	−11	−18	−13	+3
5	+5	+4	+5	+2	−4	+12	+4	0	−10	−7	+24	+8	−3	+6	−20	−6	−7	−10	−1
6	+5	+2	−8	−5	−4	+4	−4	−10	−17	−7	+10	+2	+5	0	−2	−7	−1	−6	+10
7	+3	+2	−1	−1	0	+7	+3	0	−9	−1	+8	+12	+10	−4	−4	−6	−17	−12	−23
8	−1	−2	+2	+3	−8	−3	−1	−3	−18	−26	−6	−19	−43	−60	−57	−12	−5	−9	+12
9	+4	+6	+3	+8	+8	−8	−6	−12	−14	−11	−3	+2	−7	−12	−22	−6	−4	+1	+3
10	+1	−1	−5	−2	−1	+19	+7	0	−4	−7	−3	−3	−24	−27	−26	+5	−8	−10	−3
11											−2	−1	−16	−36	−30	+11	−10	−10	−10
Average	+3	+2	0	+1	−1	+6	+1	−3	−10	−11	+4	+1	−10	−16	−21	−5	−12	−11	−7

* Hours after dose.
Oral glucose = 100 Gm.
N = Normal subjects.
I.V. glucose = 25 Gm.
L.V.H. = Hypertensive group.

TABLE 4: Spatial Magnitude of the Maximal T Vector

Individual values expressed as the per cent change from baseline following glucose.

Patients	Control (N)					Oral Glucose (N)					Oral Glucose (LVH)					IV Glucose (N)			
	½	1	2	3	4*	½	1	2	3	4	½	1	2	3	4	½	1	2	3
1	−3	−3	0	−6	−3	−49	−28	−46	−59	−21	−6	+3	−32	+3	+6	−35	−35	+6	−24
2	−6	−10	0	+2	−10	+15	−35	−15	+10	+15	0	0	0	0	0	−34	−7	+41	−17
3	+16	+13	+7	+11	+5	−23	−18	−19	−21	−21	−73	−53	−13	−13	−20	−28	−21	−14	−17
4	+53	+56	+56	+62	+41	−63	−73	−73	−15	−17	−13	−30	−3	0	0	−18	−27	−36	−36
5	+11	+17	+21	+17	+39	−48	−34	−32	−25	−20	−63	−56	−44	+25	+25	−14	−5	−16	−8
6	−14	−19	−19	−4	−25	0	−19	−11	−11	−4	−5	−32	+21	−16	−11	−22	−33	−4	−37
7	+6	−3	+12	+12	+9	+43	−13	−26	−26	−30	−10	0	−8	−6	+2	−45	−35	+5	−15
8	+8	+3	+10	+21	+38	−29	−29	−46	−8	−13	−6	−13	−31	−44	−50	−24	−20	−22	−29
9	−2	−2	−5	−2	−2	−46	−13	−38	−46	−21	−44	−32	−22	0	+49	−21	−9	+3	0
10	0	−22	−9	−17	0						0	0	+9	−9	0	0	−13	0	−3
11											+4	−8	−8	−4	+21	+6	+19	−8	−6
Average	+7	+3	+7	+10	+9	−22	−29	−34	−22	−15	−20	−20	−12	−5	+2	−21	−17	−4	−17

* Hours after dose.
Oral glucose = 100 Gm.
N = Normal subjects.
I.V. glucose = 25 Gm.
L.V.H. = Hypertensive group.

TABLE 5: Serum Potassium Values for Hypertensive Patients Expressed as Change in Milliequivalents from Baseline Following Glucose

Patients	Hours after Oral Glucose (100 Gm.)					
	0	½	1	2	3	4
1	3.4	+0.2	+0.3	+0.3	+0.3	+0.2
2	4.5	−0.2	−0.4	−0.2	0.0	−0.3
3	4.5	+0.3	+0.1	0.0	0.0	+0.1
4	4.0	+0.4	+0.1	−0.1	−0.1	+0.3
5	4.3	−0.1	+0.1	−0.2	−0.1	−0.2
6	4.5	−0.1	−0.3	0.0	−0.1	−0.2
7	4.4	−0.4	−0.5	−0.5	+0.3	−0.1
8	4.2	0.0	−0.1	−0.1	−0.2	−0.1
9	4.5	−0.1	—	−0.2	−0.4	−0.4
10	3.8	−0.1	−0.1	0.0	+0.1	0.0
11	4.4	—	−0.5	−0.5	−0.2	−0.5
Average		0.0	−0.1	−0.2	−0.1	−0.1

There was no change in the spatial magnitude of the maximal R vector, nor in the j point or ST vectors. Characteristically, the changes in the maximal T vector resulted from a decrease in amplitude with no gross directional change noted in it or the other ECG amplitude measurements.

Discussion

These data show that the effect of glucose administration on electrical and mechanical parameters of cardiovascular function is large and consistent. This relationship has been suggested by other investigators[6] since the first observations of Gardberg and Olsen[7] in 1933, but the predictability and magnitude of the response have been controversial.[8, 9, 10] Previous studies in our laboratory have shown that an ordinary meal produces a response similar to, although slightly greater than that following 100 Gm. of oral glucose. No significant changes in cardiac output and stroke volume were anticipated.[11]

It was apparent that the route of administration and the presence of L.V.H. were important factors affecting the response to glucose. The earlier appearance of an effect on the duration of left ventricular ejection and blood glucose levels after intravenous as compared to oral glucose was expected. However, the lack of a similar influence on the preëjection period and heart rate and its opposite effect on the Q-Tc response was surprising. It has been stated in the literature that the plasma levels of insulin following intravenous glucose are lower than those after oral administration.[12] A smaller or less sustained plasma insulin level would have less effect on glucose and potassium metabolism and may be an explanation for the difference in effect following those 2 routes of administration. In support of this concept 6 of the normal subjects receiving intravenous glucose had serum potassium determinations, and the decrease seen in the serum potassium after oral glucose in the patients with left ventricular hypertrophy was not observed.

The influence of left ventricular hypertrophy on the magnitude of the postprandial response was large in comparison to other factors such as age, sex, weight, prior ambulation, and the normal fasting day-to-day variability. This suggests that in a clinical population the shortening of the phases of left ventricular contraction following ingestion of food may be important in the development of cardiac problems such as angina, arrhythmias, and congestive heart failure irrespective of an absence of change in other measurements such as stroke volume and coronary blood flow. It has also been observed that the postprandial effect is additive to that of digitalis[2] and may be a mechanism for the occurrence of symptoms of toxicity (i.e., nausea and vomiting) after food in patients receiving digitalis.

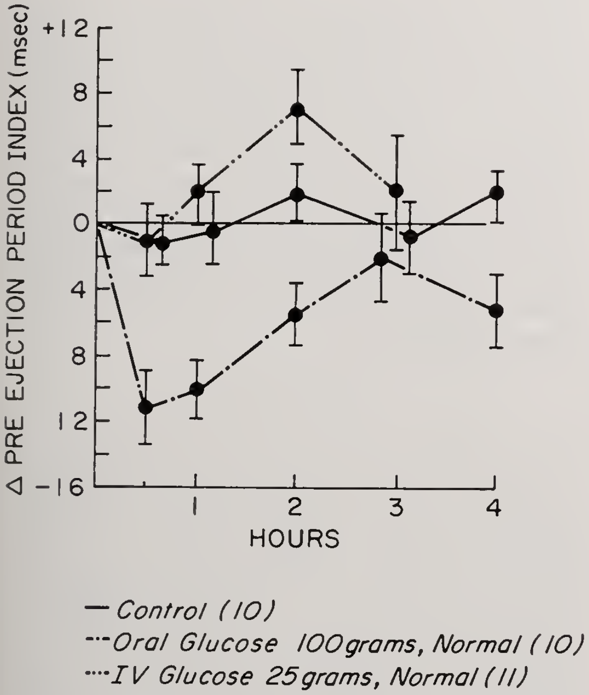

FIG. 4. Changes in the preëjection period of normal subjects following glucose were remarkable in their separation of the I.V. and oral group's response. The effect in patients with L.V.H. was similar to that of glucose orally in the normal group. Vertical bars represent the standard error of the mean.

In patients with left ventricular hypertrophy the contractile response following oral glucose was similar to normal subjects though usually greater in amplitude. In contrast, the patients with left ventricular hypertrophy showed less response than normal subjects in the spatial magnitude of the maximal T vector. This is probably due to the smaller magnitude measurements of the baseline T wave, which is the usual influence of ventricular hypertrophy, and may be a corollary to our observations on the lack of a change noted in T amplitude measurements of PVC's occurring in patients following other strong influences on repolarization such as digitalis.

The influence of increased sympathetic nervous-system activity on glycogenolysis and inhibition of insulin secretion, and its subsequent effect on serum potassium, blood glucose, systolic time-intervals, and repolarization is unevaluated.

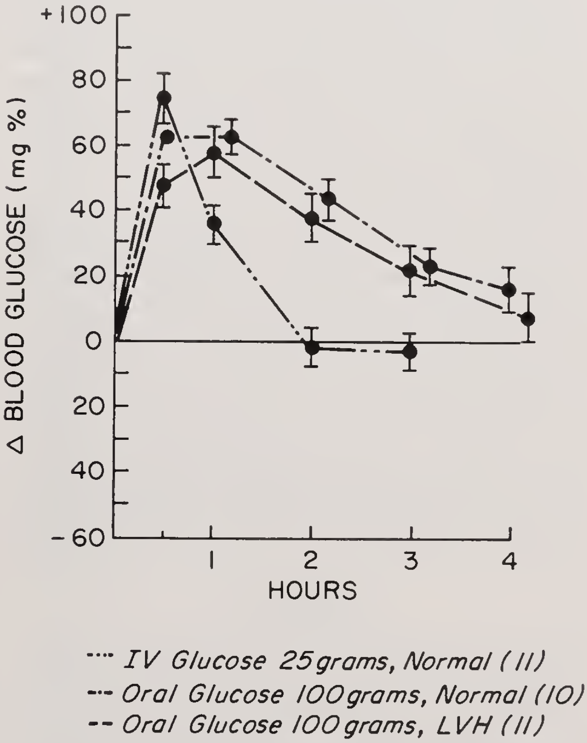

FIG. 5. Blood glucose response of normal subjects after oral and I.V. glucose and in patients with L.V.H. after oral administration. Note the early peak following I.V. glucose and the similarity of the normal and L.V.H. group's response after oral glucose. Vertical bars represent the standard error of the mean.

Further studies of cardiac output measurements and alpha and beta receptor blockade would be useful. It might be anticipated that increased sympathetic activity would promote a positive correlation between heart rate, blood glucose, and PEP_I abbreviation. However, this was not observed.

It is interesting to realize that the electrocardiographic changes following the ingestion of food are present in the usual ECG, since tracings are not taken fasting and patients are seldom more than 4 hours past their last meal. Food is not an obvious factor because the postprandial response fails to occur, but rather the technique employed in routine 12-lead electrocardiography is insensitive to these amplitude changes.

The hemodynamic and electrocardiographic effects of eating and glucose infusion must be considered as a significant influence on cardiovascular performance.

Summary

Oral and intravenous glucose loads were given to evaluate the magnitude of the postprandial effect on electrical and mechanical measurements of cardiac function with the use of the orthogonal ECG and systolic time-intervals. The response also observed in patients with left ventricular hypertrophy provided information regarding the effect in a clinical population.

The data showed that the effect following glucose was large, consistent, and equivalent to the response following meals. It was observed that the route of administration and the presence of L.V.H. were important factors affecting the response to glucose.

Eating and glucose administration are significant influences on cardiovascular performance.

We are grateful to Margaret Browning Snyder, Janvier Young and Katherine Starkey for their willing and capable assistance in the preparation of this paper.

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Scintillation Camera for Scanning—Hunter and Bering

(*Continued from page 591*)

advantage in the study of patients with stroke or altered mental function which may be related to vascular changes.

The improvements in the scintillation camera over the rectilinear scanner are that detail of material can be seen with greater specificity and accuracy, the time exposure is reduced together with the time spent in examining patients, and the dynamic qualities of the camera allow study of function rather than just that of static states. A particular organ can be studied in rapid fashion and the results utilized in a final diagnostic impression as opposed to 1 or 2 views made over a longer period of time.

Conclusions

The scintillation camera offers distinct advantages over the rectilinear scanner in identifying tumors and space-occupying lesions of the brain, lung, liver, spleen, kidney, pancreas, and bone. The camera also gives the added advantage of being able to study function with a multiplicity of views of a single organ in a single period of observation thus enabling identification of any alteration under study. This instrument added to the armamentaria of the physician increases his diagnostic ability and aids in follow-up studies of patients with previously identified lesions.

Posthypercapnic Ventricular Fibrillation—Slijepchevic et al

(*Continued from page 599*)

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The Surgical Significance of Elevated Serum Amylase, Especially Following Gastrectomy

KARL C. JONAS, M.D., M.S. (SURG.), F.A.C.S.*

THERE IS GENERAL AGREEMENT that a high degree of correlation exists between marked elevation of the serum amylase and the diagnosis of acute pancreatitis. The diagnosis is usually made in a patient who is acutely ill, with severe abdominal pain, frequently in shock, and presenting the classic signs of some intra-abdominal catastrophe. When the serum amylase is found to be markedly elevated, current surgical teaching recommends medical management and emphasizes that surgical intervention is harmful and should be avoided. However, other conditions producing severe abdominal pain also elevate the serum amylase, and in most of these prompt surgical intervention is vital.

There are 2 approaches to patients with suspected acute pancreatitis: either treat them all medically and operate only for such complications as pseudocyst formation or obstructive jaundice or explore all patients suspected of having pancreatitis with the thought that the clinical diagnosis may be incorrect. There are 2 vital questions, the answers to which should provide a clearcut preference between these alternatives. The first question is, which is the greater danger, an unnecessary diagnostic laparotomy in a patient with acute hemorrhagic pancreatitis, or failure to operate in a patient with a surgically correctable condition? The second question is, what is the relative frequency of acute hemorrhagic pancreatitis compared to that of the various clinical entities which also produce elevated serum amylase?

To these 2 questions, this report is addressed.

Differential Diagnosis

The following conditions have been shown to produce elevation of serum amylase into the range considered diagnostic for acute pancreatitis: perforated peptic ulcer, perforated gallbladder, acute nonperforated cholecystitis, choledocholithiasis, biliary dyskinesia, pneumonia, bronchogenic carcinoma, dissecting aneurysm of the aorta, intestinal obstruction, uremia, mumps, ruptured ectopic pregnancy,[1, 2] and afferent loop obstruction following gastrectomy. Injections of morphine and codeine phosphate have also been known to produce marked elevation of serum amylase.[3]

Clinical evaluation of the patient will eliminate some of these causes, but, of the intra-abdominal surgical conditions, the following could reasonably be expected to respond to the supportive medical management of pancreatitis: acute cholecystitis, choledocholithiasis, and biliary dyskinesia. The remaining acute conditions—perforated peptic ulcer, high small-bowel obstruction, afferent-loop obstruction following gastrectomy, ruptured ectopic pregnancy, perforated gallbladder, and dissecting aneurysm of the aorta—require immediate surgical intervention to avoid fatality.

Review

Trapnell et al,[4] in a review of 324 patients suffering from acute pancreatitis, showed that the mortality rate of nonoperative and operative management was similar, being in the vicinity of 23 per cent. However, in at least 3 of their nonoperative cases a surgically correctable condition was overlooked and death occurred. They concluded: "The dangers of misdiagnosis and of persisting with conservative management in patients with conditions other than pancreatitis are greater than those inherent in a properly conducted diagnostic laparotomy." One of their patients, with a ruptured aortic aneurysm, had a serum amylase in excess of 1,000 Somogyi units and another, over 3,000 Somogyi units due to afferent-loop obstruction following partial gastrectomy. Byrne and Boyd[5] in 1957 reported 2 cases of acute mechanical small-bowel obstruction with high serum amylase, misdiagnosed as acute pancreatitis. Burnett and Ness[6] in 1955 reviewed 17 cases of patients with acute abdominal findings with serum amylase over 1,000 Somogyi units, of which 13 had acute pancreatitis, 2 intestinal obstruction, and 2 perforated peptic ulcer. McGowan and Wills[7] discussed the diagnostic value of serum amylase especially after gastrectomy and reviewed several cases of afferent-loop obstruction simulating acute pancreatitis. Expectant treatment of these patients based on the marked elevation of serum amylase led to a very high mortality. Of the 113 patients reviewed by them with serum amylase of over 1,000 Somogyi units, 81 per cent had conditions which did not require urgent surgical treatment. Of the 19 per cent who required immediate surgery, more than half had a history of previous partial gastrectomy. Raffensperger[8] reported a case of small-bowel obstruction with elevated serum amylase mistakenly treated for 7 days as a case of acute pancreatitis. Exploration then revealed incarcerated strangulated ileum with perforation, peritonitis, and fatal outcome. He also reviewed 21 cases with elevated serum amylase of which 5 were due to perforated peptic ulcers, 4 to partial small-bowel obstruction, 8 to acute peritonitis, 3 in association with renal failure, and 1 of diaphragmatic hernia with torsion and strangulation of the stomach in a 13-month-old infant. Probstein[9] mistakenly treated a patient for acute pancreatitis on the basis of elevated serum amylase. Autopsy revealed portal-vein thrombosis with hemorrhagic infarction of almost the entire small bowel. Goyena and Cipolla[10] in reviewing chronic gastroduodenal and pyloric ulcers reported high serum amylase in patients with a history of gastrectomy. Calne[11] reported a case of postgastrectomy afferent-loop volvulus with gangrene and peritonitis with a serum amylase level of 3,000 Somogyi units. Diagnosis was made at autopsy. Of the 4 cases reported by Hinshaw et al[12] with serum amylase of over 1,000 Somogyi units, 3 patients had previously undergone a Billroth II-type gastrectomy. Of the 4, 3 underwent operation, 2 of whom survived. The other 2 patients died.

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* Chairman, Department of Surgery, Doctors Hospital, Washington; office: 916 Nineteenth Street, N.W., Washington, D. C. 20006.

Material

This report encompasses my own personal experience, plus all admissions to Doctors Hospital from January 1, 1962 through December 31, 1968. This institution is a surgically-oriented private hospital with approximately 70 per cent of admissions on the surgical service. Total admissions to the hospital during this 7-year interval were 53,414, and the total number of operations performed was 70,791. In table 1 the incidence of acute pancreatitis or acute hemorrhagic pancreatitis is listed. In view of the relatively low mortality indicated it may be assumed that many cases listed as acute pancreatitis were relatively mild and did not represent acute hemorrhagic pancreatitis. At any rate, in this 7-year period there were 9 deaths from pancreatitis. During this same period the patients with conditions in which the serum amylase either was elevated or would have been found to be elevated had it been determined could not be accurately counted but certainly represented a number many multiples of that represented by the diagnosis of pancreatitis. One illustrative case, the outcome of which stimulated this review, is abstracted below.

TABLE 1: Cases with Diagnosis of Acute Pancreatitis or Acute Hemorrhagic Pancreatitis
(Period covered: 1–1–62 through 12–31–68)

Year	Total Cases	No. Patients Died
1962	29	1
1963	26	0
1964	16	3
1965	25	1
1966	24	2
1967	27	1
1968	17	1
Totals...............	164	9

Illustrative Case

N. B., a 45-year-old white housewife, was admitted to the Hospital on June 12, 1966 with a chief complaint of abdominal pain of 11 hours' duration. She had felt well until 4:00 a.m. on the day of admission, when she was suddenly awakened by severe epigastric pain which radiated to both sides and to her back. It was quickly followed by nausea, vomiting, fever and chills. She called her family physician, who thought she had either acute cholecystitis or a perforating marginal ulcer and recommended admission to the hospital.

The history included a subtotal gastrectomy for bleeding duodenal ulcer in 1959, 7 years prior to admission, and anal fissurectomy 6 weeks prior to admission. She had had no gastrointestinal symptoms since the gastrectomy. On admission she appeared to be acutely ill, with a temperature of 98°F, a blood pressure of 120/70, a pulse rate of 144, and a respiratory rate of 20. There was generalized abdominal tenderness with guarding most marked in the epigastrium but no abdominal distention or no palpable masses. Clinical impression by the medical resident was (1) pancreatitis, (2) perforated ulcer, and (3) acute cholecystitis. X-ray film of the abdomen revealed no free air and no abnormalities of the large or small bowel. The hemoglobin was 12.6 Gm., hematocrit 38 per cent, white blood cells 5,400, with 62 per cent polys, 2 per cent bands, 35 per cent lymphocytes, and 1 per cent eosinophils. Urinalysis (noncatheterized), taken after intravenous glucose was started, revealed a trace of protein, 4+ sugar, specific gravity 1.032, and serum bilirubin 0.3 mg. Prothrombin level was 100 per cent, and bleeding and coagulation time were normal. The patient was scheduled for cholecystogram the following morning and was given meperidine, 75 mg. Stat. She was started on Pro-Banthine®, 15 mg. I.M. Stat. and every 4 hours p.r.n. for pain and Compazine® 10 mg. I.M. every 4 hours p.r.n. for nausea. Intravenous fluids were started, and she was allowed nothing orally except for the Oragrafin® tablets. Serum amylase and lipase were ordered for the next morning. During the night the pain persisted and she received 4 injections of Pro-Banthine 15 mg.

At 7:00 a.m. the patient suddenly went into profound vascular collapse with rapid pulse (200), unobtainable blood pressure, and complete anuria. The skin was cold but dry. Abdominal X-ray film was reported as normal. An EKG revealed only tachycardia. The possibility of Pro-Banthine intoxication was considered but dismissed. The abdominal pain persisted and became worse, and marked rigidity in the epigastrium with guarding in both lower quadrants developed. Temperature rose to 102°F rectally. Surgical consultation advised laparotomy as soon as her circulatory system could be stabilized. At this point the serum amylase was reported 3,136 Somogyi units, lipase 0.6 SGOT units, LDH 212 units. Acute hemorrhagic pancreatitis appeared to be the most likely diagnosis, and it was decided to treat the patient medically. During the next 12 hours intensive efforts were directed at correction of shock without success. She received large doses of steroids, dextran, whole blood, calcium, oxygen, antibiotics, vasopressors, mannitol, and sedation. She remained anuric, in profound shock, and in severe pain. She died at 9:40 p.m. on the day after admission. Postmortem examination revealed a pregangrenous, closed-loop obstruction of the afferent loop of the jejunum proximal to the gastrojejunostomy. An anticolic, Polya-type reconstruction had been performed and the short loop had rotated counterclockwise producing obstruction at the stoma. The pancreas was normal. In addition, there were local peritonitis and a gram-negative septicemia.

Discussion

It seems apparent that it is not possible to make a firm diagnosis of acute pancreatitis based primarily on the laboratory findings.[13] When the diagnosis is made in error, a surgically correctable condition is very apt to be overlooked and the opportunity for effective treatment lost.[14]

From my experience, acute pancreatitis is a rare disease in private patients, and the conditions most likely to be confused with it are quite common. There is no well-documented evidence that a carefully performed diagnostic laparotomy in cases of acute pancreatitis adds appreciably to the mortality. In Trapnell's series the mortality of the operated and the unoperated was essentially the same even though the operative patients as a group were much sicker than the unoperated ones. The patient with complete necrosis of the pancreas will probably not survive whether subjected to operation or treated medically. Yet the patient who appears to have this lethal condition may be saved by prompt surgical intervention, as in the case herein reported. In addition, patients with biliary-tract obstruction in addition to pancreatitis may benefit markedly from biliary-tract decompression. In hospital populations having a high incidence of pancreatitis the more conservative point of view might still be justified, but this policy does not appear to be indicated universally.

In view of the increasing number of reports of difficulties of this nature following gastrectomy, special attention should be paid to the patient with a history of partial gastrectomy who develops severe upper abdominal symptoms, especially if accompanied by a markedly elevated serum amylase.

Conclusions

Elevated serum amylase is not diagnostic for acute pancreatitis but can be found in many other disease states.

Elevation of serum amylase in a patient who has had a previous gastrectomy should especially alert the attending physician to the possibility of mechanical afferent-loop obstruction.

Acute pancreatitis is a rare disease in private patients.

Many patients with extrapancreatic elevation of the serum amylase require prompt surgical intervention; many patients with elevated serum amylase due to pancreatitis will benefit from biliary-tract decompression or drainage. It is suggested that the diagnosis of acute pancreatitis should be confirmed by laparotomy.

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A Pathological-Surgical Evaluation of Modified Radical Mastectomy

FRANCES SOCHOR NORRIS, M.D.,[*] AND PAUL S. PUTZKI, M.D., F.A.C.S.[†]

The Halstead procedure, in use for the past 50 years, fails to demonstrate better results than those obtained from modified radical mastectomy. There is growing awareness in the medical community that radical mastectomy may perhaps cause physical and psychic trauma without demonstrable prolongation of 5- or 10-year survival rates. Pathologists are increasingly concerned over radical mastectomy performed for less aggressive, nonmetastasizing variants of breast carcinoma. As demonstrated at the American Cancer Society meetings on breast cancer recently held in Washington, D.C., there is probably no other single group of cancers on which there is less agreement regarding treatment. An attempt is made by this preliminary report to review pathologic data concerning breast cancer and to exchange observations among ourselves regarding justification of radical mastectomy.

Ninety-eight consecutive, nonselected breast cancer cases done by a single group[‡] are reviewed, whose surgical treatment consisted of simple mastectomy with axillary node dissection. These patients were treated at Doctors Hospital, Sibley Memorial Hospital, and Columbia Hospital for Women between January 1963 and December 1967. Twelve patients treated by the group over this period of time were excluded from the study. Four of these had contralateral breast carcinoma treated with radical mastectomy prior to 1963 and 8 others were lost to follow-up.

Clinical Features

The age of the patients at the time of diagnosis ranges from 21 to 79 years with a median age of 61 years (figure 1). All patients were women.

A mass was palpable in the breast in 42 per cent of the women. In 27 per cent a mass was found on routine physical examination. Thirteen women had tumor present for 6 months or more with a median duration of 1.7 years. The average duration of symptoms when present was 6 weeks. Most neoplasms involved the right breast (58 per cent), and none were bilateral at the original time of surgery. Four patients subsequently developed contralateral breast carcinoma. The tumor location was as follows: upper outer quadrant 43 per cent; upper inner quadrant 8 per cent; lower outer quadrant 12 per cent; lower inner quadrant 7 per cent. Seventeen per cent were located in the nipple area; 13 per cent involved more than 1 quadrant.

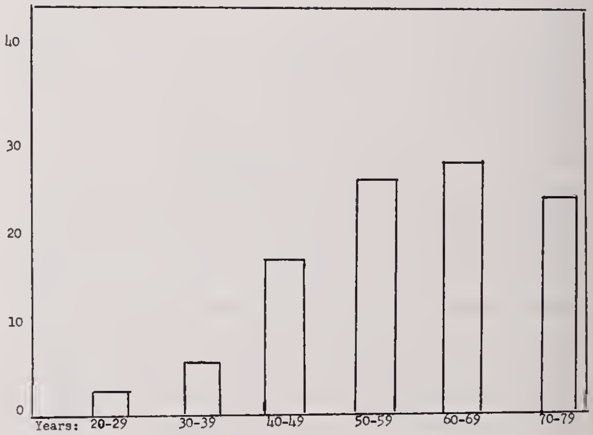

FIG. 1. Age distribution of women with carcinoma of breast.

Pathologic Features

The median diameter of the tumors was 2.5 cm., with a range from 0.8 cm. to 9 cm. Of the 39 patients with axillary lymph-node metastases, the average number of nodes containing metastatic disease was 6.

The types of carcinoma are shown in table 1. The majority of the tumors were infiltrating duct carcinoma. Twelve cases fell within the less aggressive categories of breast carcinoma (figures 2 and 3). All 12 of these patients are living, well, and free from tumor.

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[*] Surgical Pathologist, Oscar B. Hunter Memorial Laboratory, 915 Nineteenth Street, N.W., Washington, D. C. 20006.

[†] Attending Surgeon, Doctors Hospital, Washington; office: 1835 Eye Street, N.W., Washington, D. C. 20006.

[‡] Drs. Paul S. Putzki, Harry Zehner, Jr., and James H. P. Garnett.

TABLE 1: Types of Breast Carcinoma

Type	No. Patients	Per cent	Per cent Dead
Infiltrating duct	86	87.7	23.5
Colloid (gelatinous)	4	4.1	0
Adenoid cystic	3	2.1	0
Infiltrating lobular (small-cell)	2	2.1	0
Medullary	2	2.1	0
Papillary	1	1.0	0

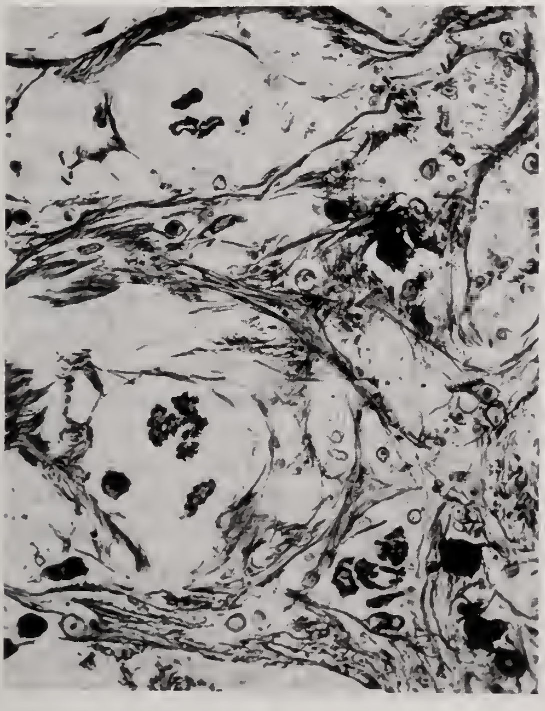

FIG. 2. Colloid carcinoma. The mucoid background prevents cohesion of tissue during frozen sectioning. Multiple sections are needed to determine absence of any infiltrating ductal component.

Therapy

All of the 98 patients underwent modified radical mastectomy. Fifty patients had postoperative irradiation, generally to the supraclavicular, axillary, and internal mammary lymphatic drainage areas. Subsequent to disseminated metastases, bilateral oöphorectomy was done in 5 cases and adrenalectomy in 1. Fifteen had subsequent chemotherapy or hormonal therapy when metastases became apparent.

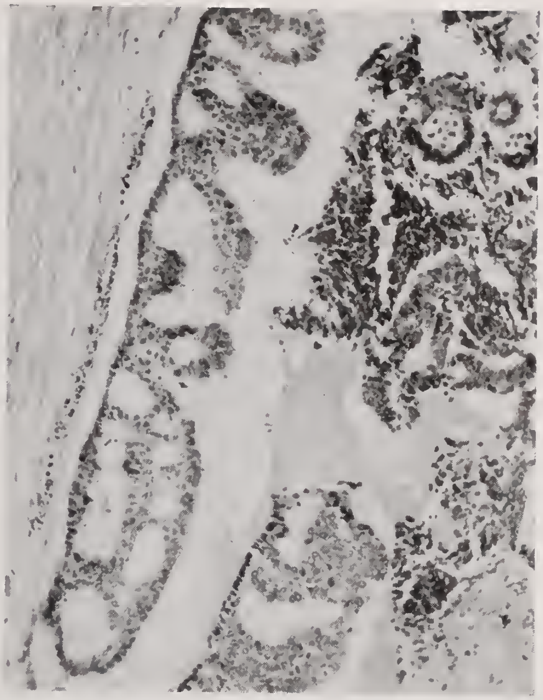

FIG. 3. Papillary carcinoma. This tumor type shows little ability for intramammary spread and is slow to involve nodes.

Modified radical mastectomy as done by the Putzki group is simple mastectomy with axillary lymph-node exenteration. The pectoral muscles, left intact, are relaxed by flexion of the arm on the involved side over the patient's head during axillary dissection. This allows access to the lymph nodes otherwise obscured and obviates need for the severance and removal of the pectoral muscles.

Survival Data

At the time of last contact 14 per cent of patients had died of tumor and 3 per cent had died of other causes (table 2) without evidence of cancer. Although only 64 per cent of patients were living and well at last contact, the crude survival was 74.4 per cent. Actuarial survival was 77 per cent at 5 years (figure 4).

TABLE 2: Survival at Last Known Contact

Status	No. Patients	Per cent
Living and well	63	64.2
Living with tumor	10	10.2
Dead with tumor	14	14.2
Dead, no evidence of tumor	3	3.1
Lost to follow-up	8	8.1

Discussion

The cases included in this series reflect clinical-morphologic patterns corresponding to the heterogeneity reflected in the literature. The series did not include a preponderant number of favorable lesions, and, to the contrary, multiple negative prognostic features were present. Thirteen women had a long history of tumor present with a median of 1.7 years. Twenty-nine per cent had tumor involving the subareolar area or the inner half of the breast, a location that carries poor prognosis because of drainage to internal lymphatic vessels. Forty-two per cent of the group had axillary-node metastases at the time of operation. Twelve patients had tumor 5 cm. or more in diameter. Contralateral breast carcinoma occurred in 4 patients subsequent to original therapy.

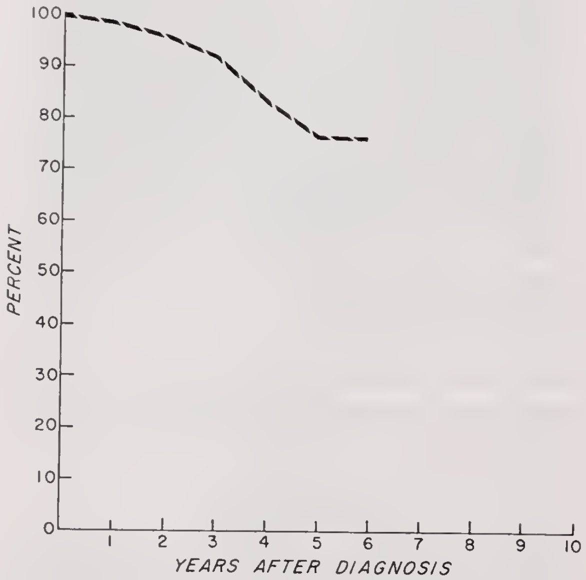

FIG. 4. Actuarial survival of 98 women with carcinoma of the breast.

There were 2 cases of lobular carcinoma in situ with small areas of stromal invasion. Despite general agreement among pathologists regarding the diagnostic criteria of lobular carcinoma in situ, this diagnosis is too often of "geographic" distribution with relatively frequent diagnosis in some areas as compared with others. Radical mastectomy for lobular carcinoma in situ is probably not indicated in view of the relatively infrequent occurrence of nodal metastases.

In none of the 3 cases of adenoid cystic carcinoma were axillary-node metastases predicted and none was found. Of the several small series of adenoid cystic carcinoma present in the literature, there is no documented acceptable instance of metastasis, and it is thought that simple mastectomy is adequate treatment unless axillary nodes are enlarged clinically.[1]

Death from pure mucinous carcinoma is rare. Because of the difficulty in preparing satisfactory frozen sections from this mucinous tumor, the likelihood of error on frozen section is great. For this reason wide excisional biopsy with thorough microscopic examination to rule out an infiltrating component is recommended. Simple mastectomy is advocated if there is no clinical axillary-node enlargement, if the tumor is less than 4 cm. in size, and if there is no evidence microscopically of infiltrating duct carcinoma.[2]

Postulates regarding the rationale for radical mastectomy have been thoughtfully presented elsewhere,[3] and, in summary, constitute the following:

1. Radical mastectomy provides 80-90 per cent survival in patients whose axillary nodes are free from metastatic disease.

2. Axillary lymph nodes removed by radical mastectomy constitute a parameter for prognostication and further therapy.

3. The method of radical mastectomy is the most convenient method of removal of the breast tumor with the axillary nodes.

Exception is taken in part to these postulates. It is thought that the first postulate is as true for simple mastectomy as for radical mastectomy except in the relatively rare cases with tumor involving pectoral muscles. Simple mastectomy permits as wide a local resection as dictated by the judgment of the surgeon and offers as great an opportunity for complete tumor removal as radical mastectomy. There is agreement with the second postulate regarding the usefulness of axillary lymph nodes as a gauge for prognosis and future therapy. It has been suggested that axillary-node metastases can be grossly palpable, and in many patients this is the case.[4] It has, nonetheless, been impossible to judge with certainty by gross examination alone the presence or absence of metastatic disease in axillary lymph nodes, and it is for this reason that simple mastectomy with axillary-node resection is supported. Accurate evaluation of metastatic involvement of lymph nodes is possible only by microscopic evaluation. It therefore seems obligatory that axillary exenteration be accomplished in order to provide an accurate means of prognostication, a definitive cure in cases with no or only low axillary-node involvement, and in order to gauge further therapy.

Despite general heterogeneity of treatment methods, the data available in the literature indicate uniformity of 10-year survival rates. Five independent international series of simple mas-

(Continued on page 617)

The Use of Fluids and Electrolytes in the Management of Ileus

J. KEITH CROMER, M.D., F.A.C.S.,* AND JUAN TRINIDAD, M.D.†

BASIC TO THE USE OF FLUIDS and electrolytes in the management of ileus is a knowledge of the concepts of the mechanisms associated with severe fluid loss and an understanding as to how this knowledge can be applied clinically. The term ileus in this presentation is used as a synonym for intestinal obstruction regardless of etiology. In light of the fact that intestinal obstruction, regardless of the cause, has a common underlying pathophysiology, this usage appears valid. Likewise the treatment program in this presentation will deal with ileus as a single clinical entity, regardless of cause.

In general, the role of the gastrointestinal tract in maintaining homeostasis of body fluids is frequently overlooked. Only when acutely challenged by certain disorders associated with severe fluid losses, i.e., diarrhea, vomiting, loss of fluids through enteric fistulae and intestinal obstruction, is this function truly appreciated.[1] Since ileus is a gastrointestinal disorder within this category, certain basic mechanisms of fluid loss, as well as the principles involved in replacement therapy in the management of this condition, will be briefly presented.

When ileus from any cause ensues, a pernicious sequence of physiologic alterations is initiated: Distention leads to impaired absorption, followed by continued secretion, leading in turn to further distention. With time the process becomes increasingly complex. As long as there is continued excretion of intestinal juices into the lumen the degree of distention increases and in time may become sufficiently great to lead to the development of edema of the bowel wall and translocation of fluid through the bowel into the peritoneal cavity. With these great losses of fluids into the lumen of the bowel, into the bowel wall, and into the peritoneal cavity, depletion of the blood volume as great as 40 per cent may occur without external evidence of fluid loss. With further progression the blood supply to the bowel wall becomes involved. In the case of a mechanical obstruction which is unrelieved, the impairment of blood supply will lead to necrosis and perforation.

The severity of fluid losses and the extent of acid-base derangement in ileus are influenced by several factors: (1) the level at which the obstruction occurs, (2) the presence of closed-loop obstruction, (3) the length of time the obstruction persists uncorrected, and (4) the presence of mechanical or functional obstruction. In high obstruction, i.e., in the jejunum, fluid loss is great because of the large amount of gastric, duodenal, biliary and pancreatic juices which are lost externally. The total volume of fluid loss in a 24-hour period with an obstruction at this level would approximate 5,000 ml. secreted as follows: 1,500 ml. from the salivary glands; 1,500 ml. from the stomach; 1,000 ml. from the duodenum; 500 ml. from the pancreas, and 500 ml. of bile.[2] In the closed-loop obstruction and in adynamic ileus there is a large transfer of extracellular fluid into the intestinal lumen. This process may be aggravated by a rapid loss of plasma and whole blood into the loop. In any ileus, once distention occurs, absorption is affected before secretion by the increase in intraluminal pressure. As a consequence, body fluids translocate into the lumen of the bowel to aggravate the degree of distention. Normally the gastrointestinal tract must absorb daily more than 8 liters of its own intestinal secretions which are required for food digestion. Once absorption ceases, this entire amount of fluid can sequester in the lumen of the bowel. In time the increased intraluminal pressure inhibits mucosal secretory activity and bowel motility. In the presence of mechanical obstruction, when the pressure in the bowel exceeds 20 mm.Hg the mucosa may become ischemic;

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* Chairman, Division of Gynecology, Doctors Hospital, Washington; Associate Clinical Professor of Obstetrics and Gynecology, George Washington University School of Medicine; office: 916 Nineteenth Street, N.W., Washington, D. C. 20006.

† Formerly Fellow in Surgery, Doctors Hospital, Washington; office: 226 Maple Ave. West, Vienna, Va. 22180.

higher pressures can lead to perforation and subsequent peritonitis.

In ileus from any cause the initial fluid loss is isotonic with extracellular fluid, and the acid-base losses depend on the ratio of bicarbonate to chloride and the loss of primarily fixed anion or fixed cation. Since gastrointestinal fluids are, for practical purposes, isotonic with body fluids, such losses must be considered extracellular fluid losses and as a loss of fluid volume in exactly the same sense that hemorrhage or acute ascites is a volume loss. Plasma, being a part of extracellular fluid, necessarily shares in this loss, with the amount of plasma loss being determined somewhat by the protein content of the loss.

In the use of fluids and electrolytes in the management of ileus certain principles must be observed if effective therapy is to be instituted. These are: (1) that all fluid loss is detrimental, (2) that fluid losses are losses of both water and solute, and (3) that these losses are fixed acid-base losses.

The most immediate problem in fluid therapy arises simply because the alimentary canal is no longer available for administering fluids. Thus, parenteral fluid therapy, with its numerous technical problems, becomes a necessity. It is indeed axiomatic that when the tube goes down the gullet the needle goes in the vein. At this stage the physician must assume full responsibility for the quantity and composition of all fluid intake. It is mandatory that all fluid loss externally be collected and measured. The enteric tube and the indwelling catheter, although their use is fraught with inherent hazards, are necessary aids to this end.

For practical purposes and to facilitate replacement, fluid losses are usually divided into renal losses and extrarenal losses. The latter include immeasurable losses through the skin and lungs as well as losses through enteric suction and estimable losses sequestered in the intestine.

In initiating treatment it is necessary to relate fluid therapy to extracellular fluid volume replacement. In other words, blood volume must be restored by the administration of salt and water. It is not necessary, except in high intestinal obstruction, to devote particular attention to the disturbance in acid-base balance. Since the loss is of extracellular fluid, replacement fluid should have the composition of extracellular fluid. Ideally, sodium and chloride should be present in normal extracellular concentrations, but with normal renal function isotonic saline is satisfactory.

In ileus an acute loss of fluid and electrolytes may occur within a period of only a few hours by rapid sequestration of huge amounts of fluid within the bowel lumen. If fluid losses continue, symptoms of hypovolemic shock and dehydration become apparent, i.e., fever, apathy, hypotension (systolic pressure below 100 mm.Hg), rapid pulse, oliguria (less than 20 c.c. per hour), anuria and delirium. In this case the hematocrit rises rapidly, indicating loss of plasma volume. If this hypovolemic shock is untreated, compensation occurs with sodium-free water as the plasma sodium concentration falls. If the fluid loss is highly acid, a metabolic alkalosis associated with hypokalemia may occur. More commonly, because of starvation, dehydration, ketosis and the loss of alkaline secretions, acidosis develops.

When fluids and salt have been lost more slowly, dilutional hypotonicity sets in as the losses occur, and the patient develops symptoms of dehydration, i.e., apathy, fever, thirst and oliguria. Once this dehydration is present, the patient must be treated with hypertonic sodium chloride, potassium losses must be replaced, and the hypoproteinemia must be corrected by the administration of plasma and albumin.

In ileus, when the losses of salt and fluids occur suddenly and rapidly, correction of the hypovolemia will prevent dilutional hyponatremia. In this situation the rapid infusion of plasma and physiologic saline is essential. Whole blood may also be necessary. Large quantities of potassium usually are lost in the intestinal fluid, and these should be replaced.

There are no specific guidelines or treatment formulas for the management of the patient with the acute fluid loss which occurs in ileus. As an arbitrary rule, extrarenal losses of both fluids and electrolytes must be replaced as soon as they occur. This rule is subject to modification, of course, depending upon the status of renal function. As an example, it would be unwise, in the face of renal failure, to replace potassium lost through gastric suction.

The volume and type of fluids administered must be governed by serial observations of the hematocrit and hourly urinary output, as well as observations of the blood pressure and pulse and, when necessary, determinations of blood serum electrolyte levels. An additional aid is the determination of the central venous pressure. Information gained from this procedure is of great value in assessing circulatory status and in determining blood-volume deficit.

To further elucidate the problem 2 selected case reports are presented:

Case 1. A 36-year-old white woman was admitted to Doctors Hospital with a 3-day history of intermittent crampy abdominal pain, obstipation, and vomiting on several occasions of a moderate amount of fluid. A pelvic operation with left salpingo-oöphorectomy had been performed 6 years previously without postoperative complications. Physical examination revealed slight abdominal distention with generalized guarding of the abdominal musculature marked in the right lower quadrant and associated with rebound tenderness. Auscultation revealed high-pitched bowel sounds. Vaginal examination disclosed increased pain with manipulation of the cervix, and palpation of the uterus and right adnexa disclosed marked tenderness. The blood pressure was 120/60, the heart rate 110, the respiratory rate 20, and the oral temperature 101°F.

The initial diagnosis was pelvic inflammatory disease, and antibiotic therapy was started. A tube was not inserted into the stomach, but the patient was not allowed food or fluid by mouth. During the following 24 hours she received intravenous infusions of 1,000 ml. of 5 per cent dextrose in physiologic saline and 2,000 ml. of 5 per cent dextrose in water. Urinary output was adequate. The following day the patient's condition appeared improved, and alimentation was begun. During the night she complained of generalized abdominal pain which was cramping in character and associated with nausea and vomiting. An X-ray film of the abdomen revealed many dilated loops of small bowel with fluid levels; no gas was seen in the colon. The hematocrit was 50 per cent, the white blood cells 12,000, serum sodium 137 mEq./L, chlorides 96 mEq./L, CO_2 content 22 mm./L, and potassium 4.13 mEq./L. The patient was intubated and prepared for surgery.

At operation there was found a low-grade pelvic peritonitis, and the small bowel was dilated and edematous. The distal ileum was obstructed, being included in a localized abscess of the right tube and ovary. The small bowel was freed and the right fallopian tube and ovary removed.

During the operative procedure the patient received 500 ml. of blood and 1,000 ml. of 5 per cent dextrose in physiologic saline. At the conclusion of the operation the pulse rate had increased to 120 per minute and there was a slight fall in blood pressure from 120/70 to 100/62. In the recovery room the patient received 2 units of plasma followed by the rapid infusion of 2,000 ml. of 5 per cent dextrose in physiologic saline. Because of poor response in pulse and blood pressure she was given a small amount of Neo-Synephrine® intravenously. Her blood pressure subsequently rose to 110/64 and her pulse improved. Rapid infusion of fluids continued with the addition of 1,000 ml. of whole blood.

The rate of the intravenous infusion was decreased as the blood pressure and pulse became stabilized. The urinary output through the indwelling catheter was maintained at between 20 and 30 ml. per hour. After the blood pressure and pulse rate became stabilized and a hematocrit of 41 per cent was reached, the patient was maintained for 24 hours on 1,000 ml. of 5 per cent dextrose in water and 1,000 ml. of 5 per cent dextrose in physiologic saline. The urinary output remained adequate and enteric suction reached a volume of 1,100 ml. During the second 24-hour period 2,000 ml. of 5 per cent dextrose in physiologic saline and 1,000 ml. of 5 per cent dextrose in water were administered intravenously. As kidney function was adequate, 80 mEq. of potassium was added to the intravenous fluids.

The same regimen was continued during the subsequent 48 hours when bowel sounds were present and gas was passed per rectum.

Comment: In this case, because of the initial peritonitis and ileus, the patient sequestered large quantities of fluid into the bowel lumen and in the distended bowel wall. Although fluid replacement had been started during the operation, the magnitude of the fluid loss was not appreciated and replacement was not sufficiently rapid to prevent hypovolemic shock. The elevated hematocrit, 50 per cent prior to surgery, indicated plasma concentration and severe fluid-volume deficit despite the lack of external fluid loss. The restoration of the blood and plasma volume by the administration of plasma, physiologic saline, and whole blood proved effective. Although potassium also had been lost none was administered until renal function was considered adequate.

Case 2. A 47-year-old white woman was admitted to Doctors Hospital for surgery for excessive bleeding attributed to uterine fibroids. She was prepared for surgery, and on the following day a total abdominal hysterectomy, right salpingo-oöphorectomy, and incidental appendectomy were performed. She received 1 unit of whole blood, 1,000 ml. of 5 per cent dextrose in normal saline, and 1,000 ml. of Ringer's lactate solution during the operation. Recovery after surgery proceeded satisfactorily until the third postoperative day. At that time the patient had an elevated temperature (102.5°F), a foul-smelling vaginal discharge, and moderate abdominal distention. A culture of the vaginal discharge was obtained. A soapsuds enema was ineffectual. The hematocrit was 42 per cent, the hemoglobin, 14.8 per cent, and the white blood cells were 35,000 with 95 per cent polymorphonuclear leukocytes. Blood chemistry revealed a blood urea nitrogen of 11.4 mg., sodium of 138 mEq./L, chloride of 103 mEq./L, and bicarbonate 23.9 mEq./L. The working diagnosis was vaginal cuff infection and pelvic peritonitis.

During the next 24 hours the patient received 1,000 ml. of 5 per cent dextrose in water with 1 Gm. of Keflin®, 1,000 ml. of Ringer's lactate solution with 500 mg. of Keflin, and 1,000 ml. of 5 per cent dextrose in water with 500 mg. of Keflin and 40 mEq. of potassium intravenously. A tube was not inserted into the stomach, but the patient was allowed clear liquids only by mouth. The same treatment regimen was continued the next day. Urinary output was adequate. The following day the temperature had declined to 101°F and the patient seemed improved but complained of abdominal cramping and diarrhea with frequent loose stools. Examination revealed an increase in the abdominal distention. An X-ray film of the abdomen revealed marked distention of the small bowel with small amounts of gas in the colon down to the rectal area. A small-bowel obstruction was the diagnostic impression. The patient was intubated with a Miller-Abbott tube (figure 1) and constant enteric drainage instituted. Blood chemistry revealed sodium 126 mEq./L, potassium 4.15 mEq./L, chloride 92 mEq./L, and bicarbonate 22 mEq./L.

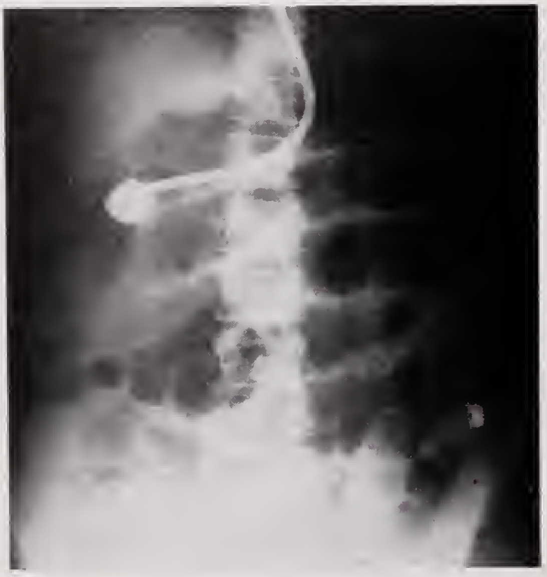

FIG. 1. Case 2. Fifth postoperative day. Beginning intubation with Miller-Abbott tube. Note distended loops of small bowel.

During the ensuing 24 hours the patient received 1,000 ml. of 10 per cent dextrose in water, 1,000 ml. of 5 per cent dextrose in normal saline, and 1,000 ml. of 5 per cent dextrose in water with 40 mEq. of potassium chloride added. The Keflin was administered intramuscularly. The patient received nothing by mouth.

Blood chemistry on the following day revealed the blood urea nitrogen to be 7.4 mg., sodium 134 mEq./L, potassium 4.6 mEq./L, chloride 94 mEq./L, and bicarbonate 18.5 mEq./L. The Miller-Abbott tube was steadily advanced. By the sixth postoperative day, the fourth day after instituting fluid therapy, the patient's temperature had gradually subsided to 99°F. The white blood cell count was 19,000, the hematocrit 35 per cent, and the hemoglobin 11.3 per cent. The vaginal culture was reported as showing *Escherichia coli*. By this time the Miller-Abbott tube was in the upper ileum (figure 2) and the bowel distention had lessened.

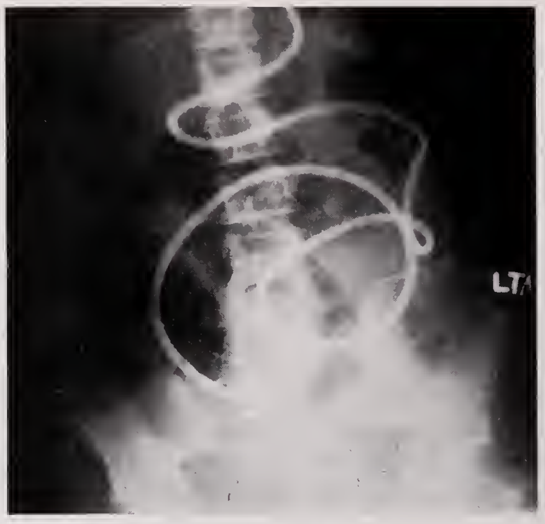

FIG. 2. Case 2. Seventh postoperative day. Miller-Abbott tube in upper ileum. Marked reduction in small bowel distention.

By the tenth postoperative day the Miller-Abbott tube was in the lower ileum (figure 3), the white blood cell count was 11,000, and the hematocrit was 36 per cent. The patient had a spontaneous bowel movement. She received a second unit of whole blood. The Miller-Abbott tube was removed, and the patient was placed on full liquid diet by mouth. Recovery after this point was uneventful.

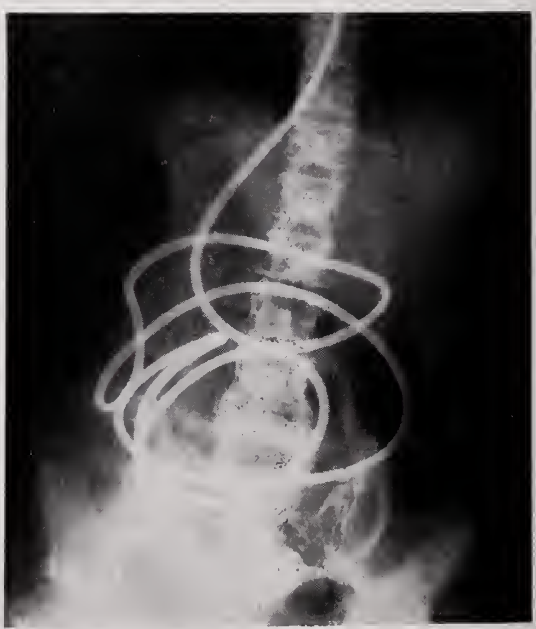

FIG. 3. Case 2. Tenth postoperative day. Miller-Abbott tube in lower ileum. Gas showing in large bowel.

Comment: In this case an ileus developed coincidentally with the development of pelvic peritonitis and an associated vaginal cuff infection.

The concomitant development of a severe diarrhea contributed immeasurably to the extrarenal fluid losses. The development of these additional complications added to the complexity of the problem and imposed an added burden in the clinical management of this case. As a result of these developments antibiotic therapy was initiated and frequent blood chemistry determinations were necessary to maintain electrolyte balance. The use of the Miller-Abbott tube in relieving intestinal distention was lifesaving in this case. The gamut of untoward developments in this elective surgical procedure reëmphasized the seriousness of ileus as a postoperative complication.

Discussion

Of equal importance to the use of fluids and electrolytes in the management of ileus is the maintenance of the nutritional status of the patient.[3] A sufficient number of calories to prevent or minimize the undesirable sequelae of starvation, i.e., acidosis and loss of potassium and nitrogen, must be supplied. Unless adequate carbohydrates are provided, hepatic glycogen is depleted within 24 hours. When this occurs body energy requirements are met by mobilization of fatty acids, with a consequent production of ketonemia and ketonuria. Potassium is lost when hepatic glycogen is broken down and protein is catabolized to supply energy for body needs. Provision of 100 Gm. of carbohydrate throughout a 24-hour period will prevent ketosis and reduce the loss of nitrogen and potassium.

In closing, it should be emphasized that the outline for the use of fluids and electrolytes in the management of ileus as presented in this paper is not offered as a panacea for the treatment of intestinal obstruction and must not be construed as such. The correct treatment of mechanical obstruction is the prompt application of surgery. The proper use of fluids, however, will ready the patient for surgery, reduce the inherent risk in the surgery, and support the patient after surgery until recovery supervenes. In adynamic ileus, i.e., obstruction without mechanical occlusion of the bowel lumen, the proper use of fluids and electrolytes is the sheet anchor on which the life of the patient is completely dependent.

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Modified Radical Mastectomy—Norris and Putzki

(*Continued from page 612*)

tectomies with and without axillary dissection reported an average of 47 per cent 10-year survival.[5-9] Average crude 10-year survival reported in 13 independent international series of radical mastectomies or extended radical mastectomies was 40 per cent.[5, 6, 7, 10-19]

Clinical trials of treatment methods for breast carcinoma are currently widespread. Although intrinsic tumor-host factors are of seemingly more importance than is therapy, therapeutic approaches should be reëvaluated by clinical trials designed to include the effects of modified simple mastectomy combined, when needed, with adjuvant chemotherapy, radiotherapy, castration and hormonal therapy. Very large series with follow-up covering long periods of time are necessary to unmask idiosyncrasies due to tumor biology and host resistance.

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President's Page

THE SCIENTIFIC ASSEMBLY—MANY HANDS, MANY THANKS

In September the Medical Society held a most successful Scientific Assembly. The attendance was excellent—1,640 registered; 160 to 330 present at each of the 5 symposia spread over 2½ days. Twenty-two authorities in specific fields were brought together to present the latest material and most advanced thinking on 5 major problems plus a peep at what the practice of medicine will be like in the 1970's.

The quality and arrangement of the scientific sessions are credited to the Chairman of the Program Committee, Dr. Nathan J. Zvaifler, who was ably assisted by Drs. Edward E. Cornwell, Jr., John S. Dillon, Robert F. Donohoe, Louis Gillespie, Jr., Philip J. Ferris, Karl Jonas, George A. Kelser, Jr., and Christopher Martin.

All the scientific sessions, special events, and exhibits were at the Mayflower Hotel. To many of us a return to the Mayflower for our Assembly was like a homecoming. The accommodations were excellent, the atmosphere very pleasing, and the management and staff most helpful.

The technical exhibits were unusually interesting and informative and well attended. The exhibitors were pleased, and many expressed their desire to return to our future Assemblies.

The scientific exhibits were excellent. They were selected and arranged by the Scientific Exhibit Committee, Dr. James R. Snyder, Chairman, and Drs. Lois I. Platt, John Chandler Smith, Charles E. Townsend and Louis Wener.

The Membership Luncheon was well attended. The speaker, Dr. Gerald D. Dorman, President of the American Medical Association, contributed to its success in no small way. His address, published on page 623 for those not present, is "must" reading. The Society is to be congratulated upon its selection of award recipients. The selections were made, with the approval of the Executive Board, by Dr. Warren D. Brill, Chairman of the Public Relations Committee and his Committee members. Dr. Irving Burka presented checks and certificates to the winners of the Philip Burka Foundation Awards. The Philip Burka Foundation was established this year by a contribution from his family in honor of the late Dr. Philip Burka, who was an outstanding member of the Medical Society. From now on each year physicians, residents and fellows may submit scientific papers in competition for prizes to be awarded from this Fund.

The Woman's Auxiliary Luncheon was well attended. The women deserve our special thanks for manning the Coffee and Donut stands, which were gathering and refreshment centers during the brief intervals between the scientific presentations.

The final event of the Assembly, the Annual Dinner Dance, was a great success and all present seemed to enjoy it. The Woman's Auxiliary and its committees, under the able leadership of Mrs. Raymond A. Osbourn, President, worked hard to make the event a pleasant one.

In behalf of the members of the Medical Society, I wish to thank Mr. Thomas Sadler and his staff for their able and cheerful assistance. Handling the numerous details preliminary to the Assembly, publicizing the events, and making all arrangements work smoothly for participants and members were done by the Assistant Executive Director, Mrs. Lucille Smith.

Finally the Society, the Executive Board and I extend our thanks and congratulations to Dr. Louis Gillespie, Jr., General Chairman, for arranging one of the most, if not the most, successful Scientific Assemblies ever presented by the Medical Society of the District of Columbia.

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Indication—Oral contraception.

Contraindications—Thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, undiagnosed abnormal genital bleeding.

Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	Mortality Rates		Hospitalization Rates (Morbidity)
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect on the nursing infant cannot be determined at this time.

Ovulen-21 Com
Directions

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching. The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values, metyrapone test; pregnanediol determination.

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Editorials

New Leadership for Developing Human Resources*

I THINK we are all dedicated to the idea that we must get the best possible medical and health care for the people of the United States.

When asked, as I often am, whether I speak for all the 217,000 members of the AMA, my reply is that I do speak for the policy of AMA set by our membership. But, frankly, I know that many of our members do not agree entirely with our policies. This is right and just. We must have new ideas and new feelings coming onto the medical scene.

I hope many of you have seen the article by John W. Gardner in September *Reader's Digest* entitled, "What Kind of Society Do We Want?" He points out that there are many ways in which a nation or an association can die. Among them they can die of old age. A society that deadens the individual cuts off the sources of its own renewal.

Last week I was out in Colorado where the State Medical Society has decided to admit students to its membership as full voting members. They have 1 medical school and 400 students, and under their constitution they have 1 delegate for every 25 members. This means that the 400 students will have 16 delegates in Colorado's House of Delegates, giving them a voting strength that exceeds all but 3 of their counties. They will probably be organized as if they were a separate county.

This is good, because it brings the voice of youth to our deliberations of what the future—the future that will have to be borne by them—is to bring. It is important, not because I believe that we should consider taking students into all our organizations (since this is a local problem which should be considered by the local individual organizations) but because we must have new leadership coming up and we must develop our human resources.

We also need the allied health professions because they will bring us an opportunity to save the physician for the things that only the physician can and should do. They can serve as the extension of the arm of the physician.

At the same time we must have incentives for those who are working in the health field—incentives of dedication, incentives of satisfaction, incentives of the feeling that they are contributing to the welfare and progress of society and doing something not only for the present but for future generations.

With this comes individual responsibility. Let me point out that not only do we have individual responsibility on a professional level, but we have individual responsibility as citizens. We need all citizens to help find the answers to our problems.

In one of our areas of concern, health care of the poor, we find that money and medicine alone cannot cure all their problems. By this I mean that the elimination of crowded housing, the elimination of improper sewage disposal, and the elimination of malnutrition go far beyond true medical care.

We also should know what each locality is doing so that we can take the best from each and apply these methods to the others.

It is important that in enhancing the functioning of the medical profession we have the support of allies. We must attract our younger people to health careers and challenge them to take a part in this important field. One young girl told my wife that she would not be able to get into medicine because of her grades, but she loved to work with children. Lois said to her, "Do you realize that you can go into the area of health education and do a very important service to the very young people that you are interested in helping? I suggest you consult your advisor at college to see what courses you should take because the field of health education is a growing one and one that basically supports all of our endeavors in the health field."

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* Remarks made at the Annual Luncheon of the Medical Society of the District of Columbia, September 24, 1969, the opening day of the Scientific Assembly.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Additionally, we must realize that local responses are needed for local needs. There is no uniform control, whether it comes from Washington or whether it comes from AMA Headquarters in Chicago, that will answer the problems of the health needs of any particular locale.

I appeal to each of you, whether you are a doctor, in one of the allied professions, or a private citizen, to dedicate yourself, your mind, and your future to the health needs of your locality.

Gerald D. Dorman, M.D.
President, American Medical Association

Applying Vietnam Experience to Emergency Medical Care in the U.S.*

Last April, right here in Airlie, I was privileged to speak at a 2-day conference on "The Community and Its Trauma Problems." That conference, which was co-sponsored by the Department of Surgery of George Washington University, dealt with the growing crisis in the delivery of health care to people, especially emergency care for traffic and accident victims. In those remarks I suggested that we ought to apply the lessons learned in Vietnam to the medical emergency here at home. I now find myself in a unique position to help bring that about. As all of you in this audience know only too well our single greatest problem in the health field is delivery of services. In Vietnam we are coping with that problem better than we are here at home.

One of the brighter spots of our experience in Vietnam has been the effectiveness of helicopter evacuation of the wounded from the front lines. As Secretary of Defense I have ordered a study within the Department and in coöperation with other Federal agencies to determine how we in Defense can help to adapt such techniques to assist victims of accidents and disasters here in the United States.

I should like to dwell just for a moment on the possibilities of the Defense Department's contribution to better health care for all Americans. In this field, and in many others, we are attempting to make Defense dollars do double duty. We are looking for ways to so perform our primary mission that beneficial side-effects for the civilian sector are possible—indeed probable—at the same time.

One example of a potential beneficial side-effect lies in the fact that literally thousands of paramedical personnel have been highly trained through tours of duty in Vietnam. These skills should be harnessed by the civilian sector to help meet the critical shortage in delivery of fast and effective medical care. It remains for our medical institutions and our entire health system to devise better means of attracting such personnel into the Nation's health system.

The Defense Department is responsible for the medical care of the military and their dependents (including those who have retired)—some 10 million persons. We operate some 239 hospitals, 467 dispensaries, and numerous aid stations. This health care system is tied together with a worldwide aeromedical evacuation system.

To overcome shortages in technically qualified health manpower and ever-rising costs associated with health care delivery, the Department of Defense is undertaking a long-range study entitled the "New Generation" of Military Hospitals. The goal of the "New Generation" program is to improve the efficiency of the base medical health care delivery system while maintaining or improving the quality of patient care. The first phase of this 10-year study is now underway and will embrace an analysis of our existing system by outside experts. This study will provide the basis for construction of a prototype hospital which will incorporate the latest medical manpower-saving devices. Hopefully, the prototype hospital will be the most forward-looking medical facility in the world today. This hospital will be the test-bed for health care delivery of the 1980's. Much of our study, initiated to help the military solve an increasingly complex problem, will be of great benefit to our civilian counterparts in the delivery of health care to the Nation at large. This is another example of the beneficial side-effects of Defense activity.

The man we honor tonight has been in the forefront of those in the medical profession who have been seeking better ways to deliver health care to people. He is Chief of Surgery at the George Washington University Hospital and The Lewis Saltz Professor of Surgery and Chairman of the Department of Surgery at that University.

It gives me great pleasure to present the first Annual Statesmen in Medicine Award to an educator, author, and surgeon—Brian Blades, M.D.

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* Editor's note: Adapted from the remarks made by the Honorable Melvin R. Laird, Secretary of Defense, at the Statesmen in Medicine Award Dinner held in honor of Dr. Brian Blades at the Airlie Foundation in Warrenton, Va., September 17, 1969.

Issuance of U.S.P. Commemorative Stamp

FOR OVER 35 YEARS organized pharmacy has sought the issuance of a commemorative stamp honoring the profession of pharmacy. Past attempts to obtain such a stamp have been unsuccessful for a number of reasons, but mainly because of the lack of organized effort in all areas of the profession and the absence of an occasion of sufficient national significance to impress the general public as appropriate for the issuance of such a commemorative stamp.

I believe that circumstances are now such that an organized effort on the part of pharmacy and medicine will be successful.

In 1970 the United States Pharmacopeia will be celebrating its 150th anniversary. Organizations old enough to celebrate their sesquicentennial anniversary are rare in America, and rarer still are those that can truthfully lay claim to as illustrious a record as the United States Pharmacopeia, a record in which pharmacists have played a major role for over a century. The U. S. P. is the world's oldest continuously revised pharmacopeia.

The United States Pharmacopeial Convention is the only national organization in America representing both the professions of pharmacy and medicine. Its members include delegates from each state and national medical and pharmaceutical organization and each accredited school of medicine and pharmacy. Representation is granted also to national organizations of chemists and to certain departments of the Federal Government. Thus the U. S. P. C. is an agent of the 2 professions, medicine and pharmacy, and is the voice of the professions to the producers and the regulators of drugs.

Standards of quality, purity, and strength established by the Pharmacopeia are enforced by the Federal Food and Drug Administration, thereby making this an outstanding and highly successful model of coöperation between the Government, the professions, and industry. We believe this aspect would be of special interest to the Nixon Administration.

In addition to the existence of a favorable political climate, a new Citizens Stamp Advisory Committee has just recently been appointed by the Postmaster General.

The only essential that is missing is a concerted effort on the part of pharmacists and physicians throughout the country. We would appreciate it greatly if the readers of the ANNALS would write appropriate letters, requesting such a commemorative stamp, to their Congressmen and to Postmaster General Winton M. Blount.

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Tonsillectomy Deaths*

TONSILLECTOMY would hardly seem to merit lengthy medicolegal discussion except for the fact that appellate courts, in the cases of fatality, have given more than passing concern to current medical procedures and practices. There is now a discernible judicial trend toward a stricter standard of medical competence, and less indulgence or reliance upon the traditional presumption that medical services are rendered or performed in an ordinary skillful manner. This would appear to be an invitation to increased litigation and adverse verdicts, particularly where both negligence and contract claims may be pursued concurrently in some states. Therefore, the admonition for continuing care in a tonsillectomy and in any medical or surgical procedure, however minor, cannot be overemphasized.

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* Reprinted from "The Best of Law and Medicine, '66–'68" by permission of the Law Division of the American Medical Association. Copyright, 1968, American Medical Association.

Rubella Vaccine Recommendations*

While rubella (German measles) is generally a mild disease when contracted during childhood, in postpubertal individuals, particularly females, there is considerably greater potential for harm. The illness is often more serious and prolonged and not infrequently has complications such as arthritis, arthralgia, and, rarely, encephalitis. In addition, when rubella is present during pregnancy, especially during the first trimester of pregnancy, but also during the second trimester, from 15 to 35 per cent of the infants may be born with what is now known as the congenital rubella syndrome. This includes partial or total loss of hearing or vision, major heart defects, mental retardation, or combinations of these defects. In addition, there is a significantly increased proportion of miscarriages and stillbirths. Thus, serious transplacental damage is done by the virus.

The incidence of rubella shows a seasonal increase in the spring, generally during March, April and May in the United States, and these seasonal increases in turn have superimposed on them major national and international (increases) epidemics occurring at irregular intervals of from approximately 6 to 9 years each. During the last 40 years there were 3 exceptionally high pandemic peaks that occurred about 1934 and 1935, 1942 and 1943, and 1964.

The primary goal of rubella vaccination is the prevention of the congenital rubella syndrome, with secondary goals of preventing rubella in postpubertal patients, where disabilities are usually more serious than the relatively mild disease that it causes in young children.

Vaccine development. In June 1969 the first rubella vaccine was licensed in the United States. This was an attenuated live virus manufactured by Merck Sharp & Dohme. It is made from the HPV-77 strain that has been grown on duck embryo cell culture. This vaccine was tested on over 13,000 susceptible children prior to licensing, with essentially no adverse reactions, although transient arthralgia or arthritis and rash did occasionally occur in older patients.

Smith Kline & French is currently manufacturing an attenuated live virus rubella vaccine from a different strain (Cendehill). This is grown on rabbit kidney cell culture in Belgium and probably will be licensed in the near future in the United States. There is a similar expectation for an attenuated live virus vaccine that has been grown on dog-kidney cell culture by Phillips-Roxane. In addition, experimental work is progressing at the Wistar Institute in Philadelphia with a still different virus strain (WI-38), which is being grown on human embryo lung cell culture (diploid cell). Thus, it is very likely that prior to the next seasonal peak, which would be anticipated in the spring of 1970, millions of doses of at least 3 different rubella vaccines will be available for use in the United States.

It is known that, following vaccination, virus particles are shed from the nasopharynx and uterine cervix. However, there have been no reports of cases of rubella as a consequence of the shedding.

Vaccine administration. The currently licensed vaccine is administered by a single subcutaneous injection of reconstituted lyophilized vaccine. The label and insert instructions should be carefully read and followed. The following precautions are recommended.

Pregnant women must not be given the vaccine because the viremia that follows vaccination and lasts 2 to 6 weeks may permit the virus to pass the placental barrier and affect the growing fetus.

If vaccination of a nonpregnant woman in the childbearing age is anticipated, special safeguards should be taken. These might include testing the woman to make sure she is not already immune to rubella† and would include carefully weighing the advantages of vaccine administration against the disadvantages, including the possibility of her becoming pregnant, with the likelihood that the fetus might miscarry or develop the congenital rubella syndrome. If the physician believes that vaccination is desirable, he should prescribe a medically acceptable method for contraception and should explain the potential risk of becoming pregnant to the patient, and, preferably, obtain written, informed consent for the vaccination.

Because of the possibility of placental transfer of maternal immune bodies and the likelihood of these interfering with the development of immunity following vaccination, it is recommended that the vaccine not be administered to children under 1 year of age. The presence of other virus diseases or any febrile active generalized infection, as well as the use of corticosteroids, irradiation, alkylating agents or antimetabolites, or other agents that would weaken the normal defense mechanisms of the individual, are contraindications to the use of rubella vaccine. Other contraindications include concurrent use of a different live virus vaccine (e.g., measles or poliomyelitis). Administration of the rubella vaccine should then be deferred for at least 4 to 6 weeks.

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* Prepared for state and county medical societies by the Council on Environmental and Public Health of the American Medical Association.

† The only reliable evidence of immunity is a positive serological test. However, because of the variation among reagents and technical procedures, results of serological tests should be accepted only from laboratories of recognized competency that regularly perform these tests.

For the Merck Sharp & Dohme vaccine (Lyovac-Meruvax), epinephrine should be available for immediate use in case of an anaphylactoid reaction. The vaccine (which is grown on duck embryo cell culture) should not be given to individuals who are sensitive to duck or chicken eggs or feathers and, inasmuch as each dose of the reconstituted vaccine contains 25 micrograms of neomycin, individuals sensitive to this drug should not receive vaccine.

General Recommendations

Inasmuch as the vaccine currently available in the United States is still relatively new (about 13,000 susceptible children had been observed for adverse reactions prior to licensing), it is possible that unanticipated adverse reactions, particularly in older patients, may occur with the general use of the vaccine. Therefore, it is recommended that any serious adverse reactions be reported promptly to the State Health Department and to the manufacturer, who is responsible for reporting it to the Division of Biologic Standards of the National Institutes of Health.

While the frequency of naturally acquired immunity varies considerably with the age of the patient and the incidence and prevalence of the disease in a particular community, the National Communicable Disease Center estimates that about 15 per cent of the children under 5 years of age have become immune through naturally acquired disease, and that for the other age groups the respective natural immunity levels are approximately 35 per cent for the 5- to 9-year-olds, 60 per cent for the 10- to 14-year-olds, 75 per cent for the 15- to 19-year-olds, and 85 per cent to 90 per cent for those 20 to 39 years old.

These figures vary from community to community but may be used as a general guide for the desirability of performing screening tests for susceptibility prior to giving the vaccine. However, each person should be evaluated on an individual basis whenever possible.

For widespread use, in view of the lack of adverse reactions in small children and the fact that about ⅔ of the children under 10 would be susceptible, all should receive the vaccine without doing a preliminary serological test for susceptibility. Children in kindergarten and the early grades of elementary school deserve initial priority for vaccination because they are commonly the major source of virus dissemination in the community. A history of rubella illness is usually not reliable enough to exclude children from immunization.

In view of the fact that circumstances will differ in various localities, it is recommended that group programs and public health programs should be launched on the basis of a coördinated plan, developed jointly by state and local public health agencies in coöperation with state and local medical and osteopathic associations.

HEALTH DEPARTMENT NOTES

Rubella Eradication Program

The possibility exists that 1969–70 may be an epidemic year for rubella in the United States. Rubella runs in 6- to 9-year cycles, with the last epidemic having occurred in 1963–64.

A wide-scale vaccination program aimed at controlling rubella is planned by the D. C. Department of Public Health to start this month as the vaccine is now available in sufficient volume for mass programs. It initially will be directed toward school children in kindergarten through sixth grade. Depending upon vaccine availability, groups to be immunized will include, in order of priority, age 4 (late preschool), and preschool children 1 through 3 years old. Vaccination will not be given to those under age 1 since persistent maternal antibodies often interfere with vaccine efficacy.

The vaccine will not be given to postpubertal females because of the possibility of existing pregnancy and the chance that the live virus vaccine could be teratogenic. Congenital anomalies occur in approximately 3 per cent of all births; the occurrence of such defects in the children of women vaccinated during pregnancy could lead to serious misconceptions concerning vaccine safety.

It is expected that other health departments in the Washington Metropolitan Area may well conduct similar programs and that private physicians will also wish to vaccinate their child patients ages 1 through 12.

Since vaccination for rubella is a new program, effective surveillance is critical. Prompt reporting of actual or suspected cases of rubella will enable the Health Department to examine vaccine efficacy, reveal possible vaccination failures, uncover major groups of unvaccinated susceptibles, and give advance warning of possible epidemic conditions.

As in the past, all reports should be made to the Epidemiology Division, Bureau of Communicable Disease Control, D. C. Department of Public Health, 801 North Capitol Street, N.W., Washington, D. C. 20002; telephone 629-3384. Case report cards may be obtained from the same address.

Raymond L. Standard, M.D.
Acting Director,
D.C. Department of Public Health

NEW MEMBERS

Active

Gilbert Paul August, M.D. Office: Children's Hospital. Born in Jersey City, N.J. Medical degree: New York University, 1962. Specialty: Pediatrics.

Roberta A. Ballard, M.D. Office: George Washington University Medical Center. Born in Duluth, Minn. Medical degree: University of Chicago, 1965. Specialty: Pediatrics.

Richard L. Bohannon, M.D. Office: 1801 Eye Street, N.W. Born in Dallas, Texas. Medical degree: Baylor Medical College, 1932. Specialty: Preventive Medicine.

Nicholas L. Christopher, M.D. Office: 2804 McKinley Place, N.W. Born in Detroit, Mich. Medical degree: University of Michigan, 1963. Specialty: Internal Medicine.

Miryam M. Davis, M.D. Office: 1832 K Street, N.W. Born in Buenos Aires, Argentina. Medical degree: University of Buenos Aires, 1957. Specialty: Pediatric Neurology.

Armando Antonio deMoya, M.D. Office: 825 New Hampshire Avenue, N.W. Born in Cuba. Medical degree: Bowman Gray School of Medicine, 1960. Specialty: Obstetrics and Gynecology.

William Ellis Gentry, M.D. Office: Washington Clinic. Born in Washington County, Va. Medical degree: University of Tennessee, 1957. Specialty: Orthopedic Surgery.

Richard J. Kelly, M.D. Office: 1835 Eye Street, N.W. Born in Washington, D.C. Medical degree: University of Maryland, 1964. Specialty: General Surgery.

Robert Todd Lewit, M.D. Office: 2141 K Street, N.W. Born in Newark, N.J. Medical degree: Harvard Medical School, 1963. Specialty: Psychiatry.

Howard D. Wood, M.D. Office: 2833 Georgia Avenue, N.W. Born in Philadelphia, Penna. Medical degree: Howard University, 1964. Specialty: Obstetrics and Gynecology.

Associate

Donald Carl Edgren, M.D. Office: 6201 Greenbelt Road, College Park, Md. Born in Winona, Minn. Medical degree: St. Louis University School of Medicine, 1946. Specialty: Internal Medicine.

Herbert S. Golomb, M.D. Office: 6060 Arlington Blvd., Falls Church, Va. Born in New York, N.Y. Medical degree: State University of New York Downstate Medical Center, 1960. Specialty: Dermatology.

Joseph David Lee, M.D. Office: 8600 Old Georgetown Road, Bethesda, Md. Born in Hanna, Wyo. Medical degree: University of Colorado, 1957. Specialty: Anesthesiology.

DOCPAC BRIEFS

or

Five Objectives of DOCPAC

The American Medical Association encouraged the formation of the American Medical Political Action Committee (AMPAC) about 7 years ago. AMPAC, in turn, nurtured the growth of the individual State PAC's. The District of Columbia Political Action Committee is known as DOCPAC. The membership consists of physicians, their wives, and other paramedical personnel.

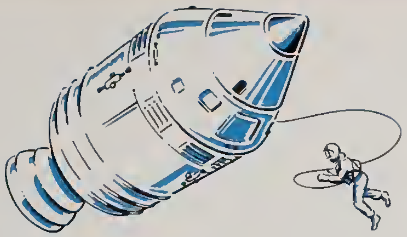
DOCPAC has as its aims:

1. To encourage all physicians and their families to vote in the party of their choice.
2. To encourage physicians to take an interest in planned legislation and where possible to help in its development.
3. To encourage physicians to contribute through DOCPAC toward the support of candidates favorable to the aims of medicine regardless of party affiliation.
4. To encourage physicians to contribute to the support of candidates of their choice over and above their DOCPAC contribution.
5. To encourage physicians to actively support candidates of their choice.

The DOCPAC movement is more interested in the stature and qualifications of the candidates than with pending issues in Congress.

If you are not already a member of DOCPAC begin your political action for 1969–70 now by joining. Write DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D. C. 20037, for more information or an application form. Dues are $20 individual, $30 family.

William H. Cooper, M.D.
Chairman, D. C. Political Action Committee



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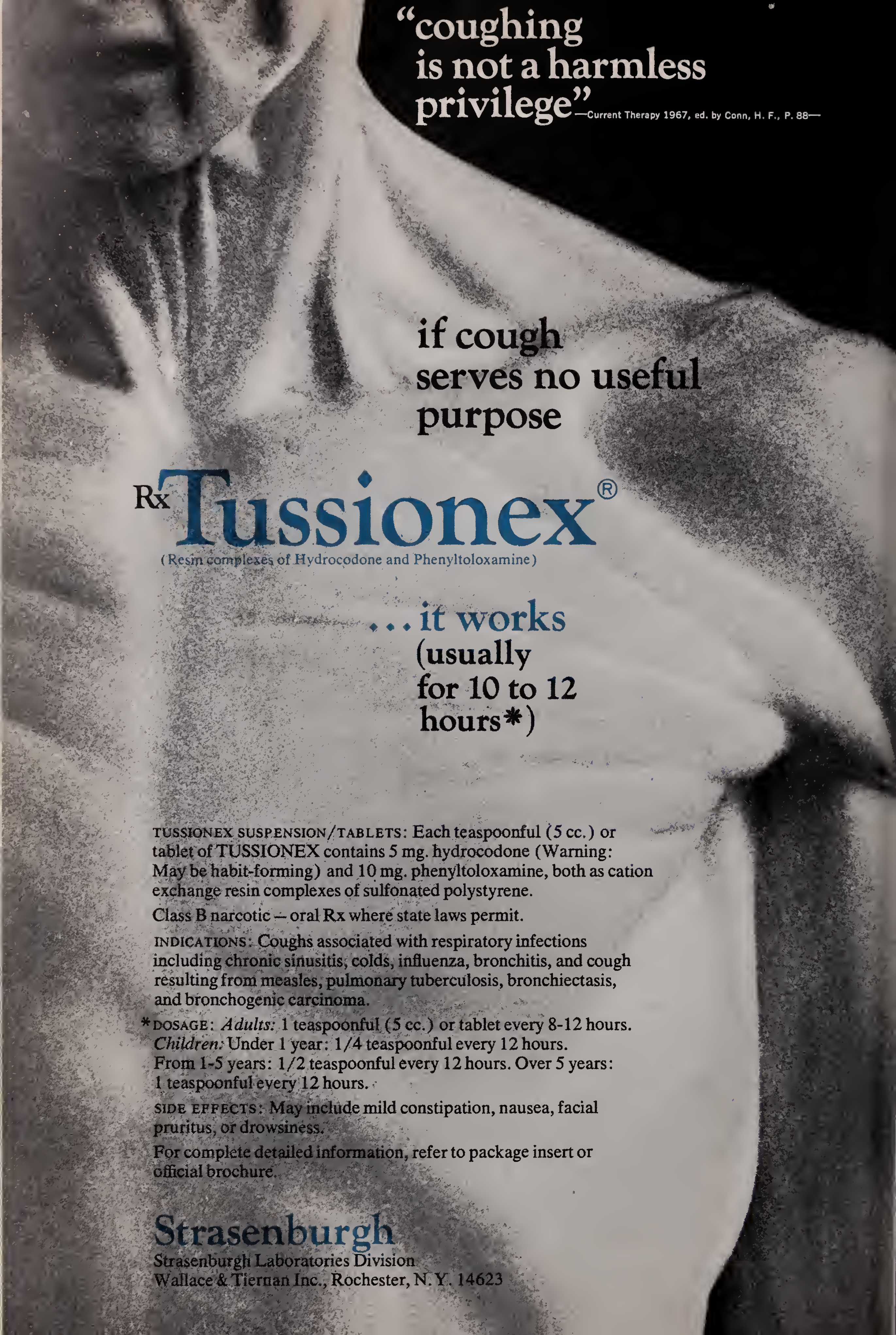

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Report on Finances and Administrative Services of Medical Service of the District of Columbia*

At this meeting one year ago it was reported that subscription income exceeded expense in 1967, and I can report that the same situation prevailed in 1968. The following information related to income and expense should be of interest.

Earned subscription charges in 1968 amounted to $48,510,775, an increase of $8,726,339 over the previous year. Income from investments amounted to $680,164. Our total income for 1968, therefore, amounted to $49,190,939, an increase of $8,903,399 over the year 1967.

Claims expense in 1968 amounted to $43,925,933, an increase of $8,966,473 over the preceding year. Payment of benefits under Medicare in 1968 amounted to $12,416,945. Thus, the total payment for physicians' services in the Washington area in 1968 amounted to $56,342,878.

The Medical Service reserve was increased by $615,235, leaving a total reserve at the end of the year of $10,739,090. This reserve would provide payment for 2.67 months of claims and operating expense, slightly less than the minimal 3-month reserve position recommended for Blue Shield Plans by the National Association.

Our operating costs in 1968 decreased from 9.3 per cent to 9.1 per cent of earned subscription income. This figure is about average for Blue Shield Plans.

Enrollment

While enrollment increased in 1968 by 50,802 participants, the pattern of participation was unusual in that new enrollment in the Federal Employee Program was substantially less than new enrollment in local accounts. At the close of the year, 1,191,047 persons were enrolled, and Medical Service of D. C. dropped from fourteenth to fifteenth in rank among the 82 Blue Shield Plans in the number of persons enrolled. However, Medical Service rose from twelfth to tenth in the percentage of population enrolled.

Claims

Under an operating agreement between Group Hospitalization, Inc. and Medical Service of D. C., GHI acts as the agent of Medical Service in such administrative functions as the enrollment of subscribers, billing and collecting subscription payments, and the payment of claims. At the present time more than 1,000 employees of GHI, most of whom perform services for Medical Service as well as for GHI, are scattered throughout 4 different buildings, with a resulting loss of continuity and communication which we hope will be relieved greatly when we are housed in GHI's new building.

Despite the use of modern electronic procedures for storage of information, statistical development, and claims processing procedures, more and more space, equipment and personnel are needed to keep up with the ever-growing work load.

The Basic Claims Department is composed of 255 employees, 32 of whom are registered nurses, engaged in a variety of activities such as coding claims' information for statistical and payment purposes, determining eligibility, assigning fees, and answering inquiries. In 1968 the Basic Claims Department processed 1,153,818 Medical Service claims, a record of more than 4,579 claims each working day. A similar variety of activities takes place in the Major Medical, FEP Supplemental, Medicare and CHAMPUS Claims Departments.

To help improve the administration of this massive amount of paperwork, the Plan held training sessions for 203 doctors' office assistants, bringing the total trained since 1962 to 1,492. Medical Service also keeps its 3,400 Participating Physicians and their office assistants informed on Plan procedures through a monthly newsletter, a physician's manual, and a variety of other publications.

An ever-increasing proportion of our payment for physicians' services is related to the customary charge in the community. With 666,000 Federal employee subscribers eligible for Supplemental Benefits, for which reasonable and customary charges are paid, and more than 178,000 persons covered under the Major Medical portion of our comprehensive contracts, we find that 64 per cent of all our underwritten business is providing benefits based upon reasonable and customary charges in one form or another. In addition, Medical Service is providing payment based upon reasonable charges under the Medicare and CHAMPUS programs.

As we look ahead to the development and expansion of our Basic Surgical Medical programs, and an expanding role as the fiscal agency for Government-financed medical care programs

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* Presented at the Annual Meeting of Participating Physicians of Medical Service of the District of Columbia, May 28, 1969.

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dications No serious untoward reactions to Gynorest have been reported and there are no known contraindications to its use.
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occasion may result in exacerbated attacks of epilepsy, migraine or asthma. **Adverse Reactions** Gynorest appears to be nontoxic.
rointestinal complaints such as nausea, diarrhea, or constipation have rarely been reported, but have not necessitated withdrawal
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eorgeanna S.: Maryland Med. J. 16:45, 1967.

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George B. McGovern
President, Medical Service of the District of Columbia

►LETTERS TO THE EDITOR

Prepaid Health Care Groups

This letter pertains to Dr. Bacon's editorial in the August 1969 edition of the Medical Annals. Dr. Bacon's comments were by and large a carefully stated and accurate picture of the "state of the art" as it exists in the United States today. However, the one exception to this is the section of the editorial dealing with prepaid comprehensive health care groups. The image presented is uncharitable and inaccurate.

The medical group physician obviously has many compensations that do not exist elsewhere. Otherwise there would be no incentive to remain with the group. We are very puzzled by what Dr. Bacon had in mind while writing: "He (i.e., the group physician) competes for promotion by the volume of work and years of service rather than by the quality of his work." How does one in the clinical practice of medicine get promoted? Quite frankly, we never felt we were competing with anyone else as we see our patients each day. We are indeed concerned with the quality of our work. We feel that quality is improved by free communication with our colleagues and the knowledge that our work is freely exposed to scrutiny of our peers.

Some of the incentives for remaining with a group are: more free time, more accessible laboratory assistance, regularly scheduled annual leave and convention leave, adequate sick leave coverage, and continual professional stimulation by exposure to the difficult clinical problems of one's colleagues.

We applaud Dr. Bacon's conclusion that the independent physician provides a unique service to the public; however, we believe Dr. Bacon has not recognized that the comprehensive prepaid medical group also has a vital role to fill in this society of ours, and in this capacity offers professionally rewarding opportunities for interested physicians.

Philip C. Brunschwyler, M.D.
Harvey R. Gold, M.D.
Nelson Goodman, M.D.
Arthur B. Rosenbaum, M.D.
Group Health Association, Inc.

Views of Senator Fannin Repudiated

I was disappointed that my friend Bill Cooper selected and the Annals reprinted part of a recent speech by Senator Paul Fannin in our August issue. Speaking of "what happened in Memphis" (i.e., the assassination of Martin Luther King), Senator Fannin said: "Mass protests, mass demonstrations, and mass marches and the like, whether labeled nonviolent or otherwise, can only serve to encourage unrest and disorder, and to provoke violence and bloodshed. And in the end those who advocate such methods often become, themselves, the victims of the forces they themselves set in motion."

Behind the Senator's glib plausibility is a wasteland of bad history and bad sociology. Like me, Senator Fannin is against violence and violent demonstrations. But he is also against nonviolent protest! One wonders what he would like the poor and nonwhite to do—write Letters to The Editor? They could go to the courts, of course—if they had the money for lawyers and if the juries weren't all-white (until the Federal Government stopped this). Or they could vote Stennis, Eastland, et al out—if they had been permitted to vote. Or they could have waited until Stennis et al had a change of heart. . . .

That there were minor ripples of violence about the 1963 March on Washington (300,000 people!), the Selma march, and the Memphis protest is true. But they were minor, significant gains were accomplished (despite what both the black militants and Senator Fannin seem to believe), and the injustices at issue were enormous. Psychotic, violent people will strike at any great leader—did Lincoln advocate violence? William McKinley? John Kennedy?—and the implication that somehow Martin Luther King brought violence in his wake or incited his own assassination is detestable.

Senator Fannin is entitled to his views. Our Society should not be the group to spread or endorse them.

M. J. Halberstam, M.D.

To the Editor:

I am so pleased that my good friend, Mike Halberstam, has read the DOCPAC Brief in the D. C. Annals. His letter gives me the opportunity to state that Senator Fannin's speech was reprinted, with his permission, as it contained some philosophies relevant to the practice of good medicine. However, the inclusion of his speech in the Annals does not represent the endorsement by either the D. C. Medical Society or DOCPAC of everything that Senator Fannin said. As Dr. Halberstam knows, DOCPAC supports members of both major political parties, some of whom are liberal and some of whom are conservative.

William H. Cooper, M.D.

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7. Long-sleeved shirts worn constantly to hide needle marks.
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9. Borrowing of money from fellow students to purchase drugs.
10. Stealing small items from school.
11. Finding the student in odd places during the day such as closets, storage rooms, etc. to take drugs.

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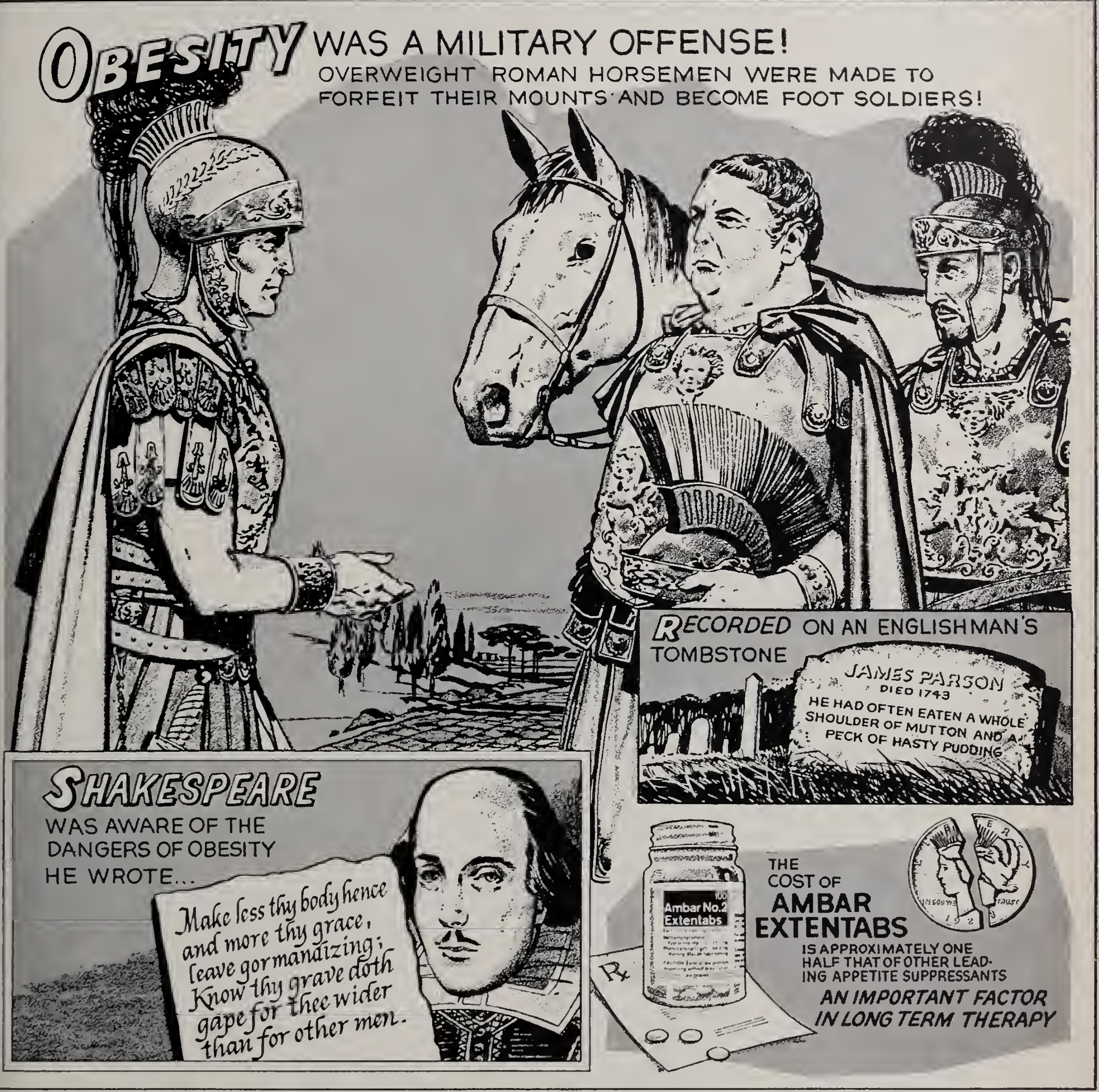
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Medical Society Award-winners for 1969

THE COLONIAL ROOM at the Mayflower Hotel was filled to capacity for the opening day luncheon of the 1969 Scientific Assembly, September 24, which has become the occasion for presenting special awards. Presiding was the President of the Society, Dr. Frank S. Bacon, who introduced the honored guests. They included Dr. Gerald D. Dorman, President of the American Medical Association, the Deans of the 3 Medical Schools, the D. C. Director of Public Health, officers of the Medical Society, and other distinguished persons. In his welcome Dr. Bacon mentioned that this was the 152nd year of the Medical Society.

Dr. Bacon called on Dr. Paul R. Wilner, Chairman of the Executive Board, to present the Certificate for Meritorious Service to Dr. Worth B. Daniels. This Award recognizes a member of the Society who has distinguished himself in service to the profession and to citizens of the District of Columbia. Dr. Wilner said of Dr. Daniels that he epitomized "the compleat physician" and called him the Osler of Washington. Dr. Daniels, he said, revitalized old Emergency and Garfield Hospitals and helped lay the "building blocks" of the Washington Hospital Center. Dr. Daniels has served on the faculty of Georgetown University School of Medicine, on the Board of Trustees of the National Medical Library, and as consultant to the Veterans Administration and the Armed Forces.

The Robins Community Service Award, in the form of a plaque, was presented to Dr. Seymour Alpert, recently named Vice President for Development of George Washington University. Dr. Alpert has distinguished himself in the fields of medical care and community affairs. The American Society of Anesthesiology, United Givers Fund, the Boys Club, and Jewish charities are among the organizations that have benefited through his participation. He is presently Chairman of the Medical Society's Interdisciplinary Committee on Drugs.

Dr. John M. Keshishian presented the John B. Nichols Award for laymen to Mr. William Doores, for 15 years a member of the Board of Directors of the Arthritis and Rheumatism Association of Metropolitan Washington. Mr. Doores contributes a tremendous amount of time every year toward the furtherance of the Rheumatism Association. With his help the Association has grown from a handful of interested individuals to an organization with a board of 75 members, including many

AWARD-WINNERS AT MEDICAL SOCIETY'S SCIENTIFIC ASSEMBLY

DR. GERALD D. DORMAN (left), President of the American Medical Association, and Dr. Frank S. Bacon (right), President of the D. C. Medical Society, are congratulating the 1969 award-winners at the Annual Awards Luncheon, September 24, at the Mayflower Hotel during the Society's Scientific Assembly. Left to right from Dr. Dorman are: Dr. Worth B. Daniels, who received the Society's Certificate for Meritorious Service; Mr. William R. Doores, selected for the John Benjamin Nichols Award for laymen; and Dr. Seymour Alpert, recipient of the Robins Community Service Award.

prominent persons of the city. Despite the fact that he himself is handicapped with severe rheumatoid arthritis he has taken time to work with committees and individuals inside and out of the organization to further its ends.

Dr. James R. Snyder, Chairman of the Scientific Exhibit Committee, announced this year's award-winners. They were:

First Award: Drs. Grant P. Bagley and Thomas Goodridge, Washington Hospital Center, and Drs. Herbert Likotz and Oscar I. Dodek, Jr., Bethesda, Md., for their exhibit, "Operative Culdoscopy."

Second Award: Dr. William Gilbert, Department of Ophthalmology, George Washington University Medical Center: "Diabetic Retinopathy—Treatment by Photocoagulation."

Third Award: Dr. Paul E. Shorb, Jr., Associate Professor of Surgery, and Dr. Calvin T. Klopp, Warwick Professor of Surgery, George Washington University School of Medicine: "Cryosurgical Techniques in Cancer Therapy."

Fourth Award: Drs. Whei-Rung Fu and Larry Stanton, Assistant Professors of Radiology, and Dr. William W. Stanbro, Professor of Radiology, George Washington University School of Medicine: "Angiography of Renal Trauma."

A new presentation this year was the Philip Burka Foundation Awards in memory of Dr. Philip Burka, Washington surgeon who died in 1967. Dr. Irving Burka presented the awards in behalf of several members of the family who were present. The recipients, residents and fellows in the Washington Metropolitan Area, competed in an essay contest for the prizes. The first award of $500 went to Dr. Hamid Sahebjami and the second, $300, to Dr. S. Lekagul, both residents of the Washington Hospital Center. Dr. William A. McNamara received honorable mention.

Dr. Dorothy Holmes, ophthalmologist, was awarded the AMA's Certificate for Service in recognition of her volunteer service in the Vietnam Program.

The concluding honoree was Dr. William S. McCune, who received a Certificate of Appreciation for his service as immediate Past President of the Medical Society.

Dr. Dorman was the guest speaker. His thought-provoking message appears on page 623 in this issue.

In his President's Page this month Dr. Bacon expresses his appreciation to the many committee and staff members who helped to make the 1969 Scientific Assembly an outstanding success.

Dr. Blades Named First "Statesman in Medicine"

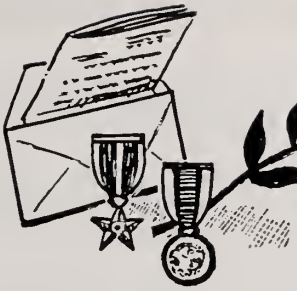
Dr. Brian Blades, surgeon, teacher, author and editor, was honored for his "lasting contributions to medical education and surgery" at a dinner in his honor at Airlie House, Warrenton, Va., September 17. At that time he received the first Statesmen in Medicine Award created by the Airlie Foundation to honor annually an individual who has significantly contributed, over the years, "to the advancement of medical practice, research or education." Dr. Blades received a check for $5,000 and a replica of a sculptured bronze bust of himself; the original bust will remain in the Federal Room at Airlie House.

The Honorable Melvin R. Laird, Secretary of Defense, presented the award to Dr. Blades. His remarks are published in this issue of the Medical Annals on page 624. Other distinguished guests at the Statesmen in Medicine Dinner were Senator Edmund S. Muskie, of Maine; Dr. Lloyd H. Elliott, President of George Washington University; Mortimer M. Caplin, Esq., President of the Board of Directors of Airlie Foundation; and Dr. Murdock Head, Director of Airlie Foundation. Mr. Eddie Albert was master of ceremonies.

Dr. Blades is Lewis Saltz Professor of Surgery and Chairman of the Department at George Washington University and Chief of Surgery at the University Hospital. A native of Kansas, he graduated from the University of Kansas and received his medical degree *cum laude* from Washington University in St. Louis. Entering military service in the Army Medical Corps in World War II, he became Chief of Thoracic Surgery at Walter Reed General Hospital, was a consultant in surgery to the Army Surgeon General, and left the Army 4 years later with a Legion of Merit and the rank of Colonel. Shortly thereafter he joined the medical faculty of George Washington University as Chairman of the Department of Surgery.

Dr. Blades has received many honors during his long years of teaching. The University of Kansas and Washington University have both honored him, as well as the Veterans Administration which conferred upon him its Commendation Award of 1963. He is a member of numerous medical and surgical organizations and the author

(*Continued on page 650*)



News & Personals

Summary of Executive Board Actions

Proceedings of September 22 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Thomas M. Arnett, Robert J. Coffey, Henry D. Ecker, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. The meeting was called to order by Dr. Wilner at 7:05 p.m.

The minutes of the August 25 meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

August	28	Traffic Committee
September	3	Fee Review Committee
	4	Physician Placement Committee
	5	Subcommittee on Community Health Week
	9	Committee on Constitution and By-laws
	9	Board of Credentials
	11	Membership Committee
	11	Breast Cancer Study Committee
	12	Committee on Emergency Medical Service
	15	Committee on Environmental Health
	16	Grievance Committee
	16	Licensure Committee
	17	Program Committee of Grantee (RMP)
	18	Traffic Committee

Board of Credentials: On recommendation of the Board of Credentials, 10 applicants were elected to Active membership and 3 to Associate membership. Their names appear on page 628. Approval was given to the following changes in membership status:

Transfers

Associate to Active: Edward D. Crockett, Jr.
Active to Life: Samuel A. Machlis

Regional Medical Program: Dr. Arthur E. Wentz appeared in person to give a report on RMP activities. Following his presentation Dr. Wilner commended him for his excellent report and coöperation with the Society.

U. S. Pharmacopeial Convention—1970: The Society's President was authorized to appoint a delegate and alternate delegate to the Pharmacopeial Convention in 1970.

Committee on Constitution and By-laws: The recommendation of this Committee to amend Chapter IX, Article IV, Section 1, paragraph 4, was discussed. A motion was made and carried that the paragraph referred to be amended to read as follows:

"If any competent authority charges a member with a felony or crime involving moral turpitude the Grievance Committee after studying the case may recommend to the Executive Board appropriate action until such charges have been disposed of. If the accused is convicted the Grievance Committee should reconsider the case and make its recommendation to the Executive Board."

Health Foundation's Board of Directors: The following slate of officers to serve as the Board of Directors of the Health Foundation was approved:

Frank S. Pellegrini, M.D. (Society's President 1970)
Thomas Sadler (Society's Secretary-Treasurer)
Wilfred Dudley, D.D.S.
John R. McHugh, Pharmacist
Grace Matthews, R.N.
Roland B. Scott, M.D.
Marvin Korengold, M.D.
Edward W. Nicklas, M.D.
Renah Camalier
Mrs. James Yates

An additional Board member will be the Medical Society's new President-elect.

Appointees to Board of Trustees of GHI and Medical Service: The Board approved the reappointment of Dr. Josephine E. Renshaw to the Board of Trustees of Group Hospitalization,

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Inc. and the renomination of Dr. Jack Kleh and Dr. Philip Philbin to the Board of Trustees of Medical Service of D. C.

There being no further business, the meeting was adjourned at 9:10 p.m.

MEETINGS

The 23rd Clinical Convention of the American Medical Association will be held in Denver, Colorado, November 30 through December 3, 1969. Headquarters hotel will be the Denver Hilton. Scientific sessions will be in Denver's convention complex where there is ample exhibit space and meeting rooms.

The Department of Pediatrics of Georgetown University School of Medicine is presenting its sixth **John Fitzgerald Kennedy Memorial Lectureship** on November 21, 1969. The lecturer this year, Dr. Frederick C. Robbins, Dean of Medicine, Western Reserve University, will speak on "Interaction of Virus and Host" in the Gorman Auditorium at 10:30 a.m. The lecture will be preceded by Grand Rounds at 8:30 a.m. All interested physicians are cordially invited to attend.

The District of Columbia Public Health Association, with the coöperation of the Medical Society of D. C., is presenting its **second seminar on "Health Services to the Aged and Disadvantaged"** on Thursday, December 11, from 1:30 to 4:30 p.m. The meeting will be held in the Exhibit Hall of the Medical Society. Leading the discussion, which will be on legislative aspects of the subject, will be The Honorable Wilbur Cohen, formerly Secretary of Health, Education, and Welfare, who is now Dean of the School of Education at the University of Michigan in Ann Arbor.

The meeting is open to interested physicians and guests. There is no registration fee.

GENERAL NEWS

The American Board of Family Practice announces that it will give its **first examination for certification** in various centers throughout the United States. The examination will be over a 2-day period, February 28 and March 1, 1970. Information regarding the examination and eligibility for the examination may be obtained by writing Dr. Nicholas J. Pisacano, Board Secretary, University of Kentucky Medical Center, Annex 2, Room 229, Lexington, Ky. 40506.

George Washington University and the Children's Hospital of the District of Columbia signed an agreement, September 17, to coördinate and consolidate their interests and resources in promoting education for the care of sick children and for all areas of child health and development. Under the agreement, the Hospital and the University will establish a nonprofit Child Health Education Foundation to supervise their joint programs and to offer other interested educational institutions broader opportunities for participating in the utilization of resources at Children's Hospital and its affiliates.

With the agreement Children's Hospital becomes the primary child health and development "arm" of the George Washington University Medical Center, and George Washington becomes the university with which Children's has its primary affiliation. Members of the Hospital medical staff engaged in teaching medical students will have faculty appointments at George Washington. Provision is made in the agreement, however, for faculty members from other universities to teach at the Hospital and to engage in its educational programs. Currently Children's serves as a center for the teaching of pediatrics to medical students from Georgetown and Howard universities, as well as from George Washington.

To improve its capacity for serving all sick children in the Metropolitan Washington Area, Children's is planning the construction of a new hospital adjacent to the Washington Hospital Center, scheduled for completion in 1972 or 1973.

The American Council of Otolaryngology has opened its national headquarters with offices at 1100 17th Street, N.W., Washington, D.C. Dr. John E. Bordley, of Baltimore, is Executive Director and Dr. Wesley H. Bradley, Syracuse, N.Y., consultant and assistant to the Executive Director. Dr. Jerome A. Hilger, of St. Paul, Minn., is Chairman of the Board of the Council.

The American Council, founded in September 1968, is the first national body designed specifically to represent otolaryngology through the development of national programs for improved patient care, greater educational opportunities, and to further research.

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The formation of the **Medical Association Executive Advisory Committee** to the Executive Vice President of the American Medical Association marks a new relationship with the AMA. The Committee was formed in October when the Board of Directors of the American Association of Medical Society Executives endorsed the proposal by Dr. Ernest B. Howard. The Committee will be composed of the President, President-elect, immediate Past President, and Secretary-Treasurer of AAMSE and the chief executives of 4 state associations, 2 national specialty groups, and 2 county medical societies. Mr. W. Harold Parham, Executive Director of the Florida Medical Association, will serve as first President of the Committee.

Serving as officers of the **Washington, D. C. Dermatological Society** for 1969–70 are:

Dr. John A. Kenney, Jr., *President*; Dr. Philip L. Repetto, Jr., *Vice President*; and Dr. Morton A. Kress, *Secretary-Treasurer*.

Dr. Hugh H. Hussey, Director of the AMA Division of Scientific Activities, has been **appointed Editor** of *The Journal of the American Medical Association* **and Director of the Division of Scientific Publications,** effective January 1. He will succeed Dr. John H. Talbott, who has been Editor of the *Journal* since October 1959; he will become Editor Emeritus of the *Journal*.

Dr. Hussey received both his Bachelor of Science and medical degrees from Georgetown University, where he later taught and became Dean of the School of Medicine, serving in that capacity from 1958 until 1962. He was a member of the AMA's House of Delegates, representing the District of Columbia Medical Society, from 1950 to 1956, and a member of the AMA Board of Trustees from 1956 to 1962. He was Chairman of the Board when he resigned in 1962.

Dr. Richard S. Wilbur, of Palo Alto, California, has been **appointed Assistant Executive Vice President** of the AMA, effective September 15. Dr. Wilbur is a nephew of Dr. Dwight L. Wilbur, immediate Past President of the AMA.

Dr. Larry McGowan, formerly of Philadelphia, has been **appointed Associate Professor of Obstetrics and Gynecology at the George Washington University Medical Center.** He has been serving as Associate Professor of Obstetrics and Gynecology at Hahnemann Medical College and Hospital and as Director of Obstetrics and Gynecology at the Thomas M. Fitzgerald Mercy Hospital in Darby, Pa.

Dr. McGowan received his medical degree from the University of Illinois. In 1958–60 he was stationed at the National Naval Medical Center in Bethesda, Md., and he held a research appointment in gynecologic pathology at the Armed Forces Institute of Pathology in 1959.

▶ PERSONALS

Dr. W. Montague Cobb, former Head of the Department of Anatomy at Howard University College of Medicine, has been appointed Distinguished Professor of Anatomy in the College retroactive to July 1, 1969. The announcement was made in September by Dr. James E. Cheek, President of the University, and was approved by the Executive Committee of the Board of Trustees. In making the appointment, the Executive Committee expressed in a resolution its appreciation to Dr. Cobb "not only for his personal scholarly contribution in the field of anatomy and his many years of dedicated service to the College of Medicine of Howard University, but also for his interpretations of the contributions of blacks to American medicine."

Dr. Harry Zehner, Jr. will be the first Chairman of a 23-member Advisory Committee on Emergency Medical Services in the District of Columbia. His appointment was made by Mayor Walter E. Washington. The group will develop standards and regulations for training ambulance personnel and for ambulance equipment and supply. It will also suggest standards for emergency departments in the medical treatment facilities. Established under the Federal Highway

Safety Program the Committee represents medical, government and community groups.

Dr. Henry S. Robinson was confirmed by the Senate, October 8, as a member of the District of Columbia City Council, after winning bipartisan support at his confirmation hearing. Dr. Robinson was a delegate to the 1968 Republican National Convention and a member of the platform committee. A Washingtonian, he is Vice President of the Boys' Clubs of Washington and active in the National Association for the Advancement of Colored People and the Urban League. He is Associate Professor of Orthopedic Surgery at Howard University College of Medicine and attending surgeon at Freedmen's Hospital.

Dr. Angelo D'Agostino has been appointed Associate Professor of Psychiatry at George Washington University Medical Center. Dr. D'Agostino received his medical degree from Tufts University School of Medicine and a Master's degree in surgery after training in Boston. He served as Chief of Surgery at Bolling Air Force Base Hospital from 1953 to 1955.

Leaving surgery, he entered the Jesuit order in 1955 and was ordained a priest at Woodstock, Maryland, in 1966. His psychiatric training was done at Georgetown University and he has been associated with the Washington Psychoanalytic Institute since 1962.

His duties in his new position will include development of further psychiatric assistance to the Department of Rehabilitation and hospital liaison in general.

Dr. John R. Pate was recommended by a member of the Bar of the Supreme Court to practice before the Supreme Court of the United States and his application was accepted in May. He is one of very few physicians in the United States so eligible. Dr. Pate is Chief of the Bureau of Communicable Disease Control of the District of Columbia Department of Public Health.

The largest number of surgeons in the history of the American College of Surgeons was inducted as new fellows of the College, October 9, during the Clinical Congress in San Francisco. Those inducted from the Washington, D. C. area were **Drs. W. Landon Banfield, James C. Bulger, Alexander M. Burnett, Vicente C. DeGuzman, William F. Feller, John C. Kenealy, Thomas F. Magovern, Ali Moghtader, Arthur R. Pilkerton, Jr., Carlos A. Silva, and James G. Sites.** These physicians are Active members of the D. C. Medical Society except Drs. Bulger and DeGuzman, who are Associate members.

OBITUARIES

Edgar Allan Bocock, M.D.

(1892–1969)

Dr. Bocock was a physician who decided early that his contribution "to the greatest number" could come best through hospital administration. He came to Doctors Hospital as administrator in the early '40's and soon no detail of the increasingly complex task was beyond his grasp.

Some who listened to Dr. Bocock thought him addicted to unnecessary verbosity, but more knowledgeable critics recognized him as a virtuoso in the use of language. He liked to express fine nuances of meaning which appealed to him for definition. The late Dr. White, with Dr. Bocock at his right hand, presided over the Board and major committees of this Center in many more than 5,000 formal meetings. And now they are gone from among us, following Drs. Hunter, Sr., Hyde, and Morrision (of the group who started the Washington Medical Center). It would be so easy for those of us left from the old Board to feel diminished by our sadness. That would be the whisperings of our hearts. The counsel of our wisdom is that the good they have done does live and that the Medical Center is richer for their having been so long a part of us.

DONALD STUBBS, M.D.

DR. EDGAR A. BOCOCK, Administrator Emeritus of Doctors Hospital, died, September 25, 1969, at the Hospital. He lived in Bristow, Va.

Born in Stuarts Draft, Va., on September 14, 1892, Dr. Bocock received his medical degree from the Medical College of Virginia in 1915. He interned at St. Luke's Hospital in Richmond.

From 1916 to 1917 Dr. Bocock attended the Army Medical School and was assigned to be surgeon in charge of the post hospital at Fort Randolph, Panama Canal Zone. Sent overseas, he served as executive and commanding officer of Mesnes Hospital Center in France which cared for veterans of World War I.

Following the War, Dr. Bocock was Superintendent of Santo Tomas Hospital in Panama and became Director General of Hospitals for the Republic of Panama.

Coming to Washington, Dr. Bocock was hospital inspector at Walter Reed Hospital, with the rank of Major, from 1925 to 1927. He joined Gallinger (now D. C. General) Hospital in 1927 as Superintendent and served for 16 years. In 1944 he was selected as Administrator of Doctors Hospital and Superintendent of the Washington Medical Center and served in those posts until he retired in 1967.

Dr. Bocock was an Associate member of the Medical Society of the District of Columbia from 1931 until 1966. He was formerly a Fellow of the American College of Surgeons and for many years a member of the American Medical Association and the Medical Society of Virginia.

He leaves his wife, Mrs. Florence Carlson Bocock, of Bristow, Va.; a son, E. Allan Bocock, Jr.; and a brother, J. Frank Bocock, of Staunton, Va.

James Gordon Cumming, M.D.

(1879–1969)

Dr. James G. Cumming, former Director of the Bureau of Preventable Diseases of the District of Columbia Health Department, died, September 1, 1969. His home for 50 years was at 2801 34th Place, N.W.

Dr. Cumming was born in Oil City, Penna., February 16, 1879. He graduated in medicine from the University of Michigan in 1903 and in 1905 accepted the directorship of the Pasteur Institute at the University in Ann Arbor and also taught at the University Medical School until 1914. In that year he became Director of the Bureau of Communicable Diseases of the California State Health Department.

When the United States entered World War I, Dr. Cumming was commissioned Captain in the Medical Corps of the Army and served in the United States and Europe as Chief Sanitary Inspector. He was discharged with the rank of Lt. Colonel and received the Distinguished Service Medal for exceptional meritorius services in the control of infectious diseases.

In 1925 Dr. Cumming became Chief of the Bureau of Preventable Diseases and Director of Laboratories, District of Columbia Department of Public Health, and served until his retirement in 1949.

He contributed over 90 scientific articles to the literature in the field of public health.

Elected to Active membership in the Medical Society of the District of Columbia in 1928, Dr. Cumming became a Life member in 1965. He was a member of the American Medical Association, the American Association of Military Surgeons, and the American Public Health Association. His varied interests are further indicated by his membership in the Cosmos Club, the American Forestry Association, the American Museum of Natural History, the American Legion, the Scottish Rites, and the President's Club of the University of Michigan. A 200-acre farm in Indian Head, Md., where he experimented with grasses and their effect on cattle, he deeded to the University of Michigan.

There are no immediate survivors.

Elevated Serum Amylase—Jonas

(*Continued from page 609*)

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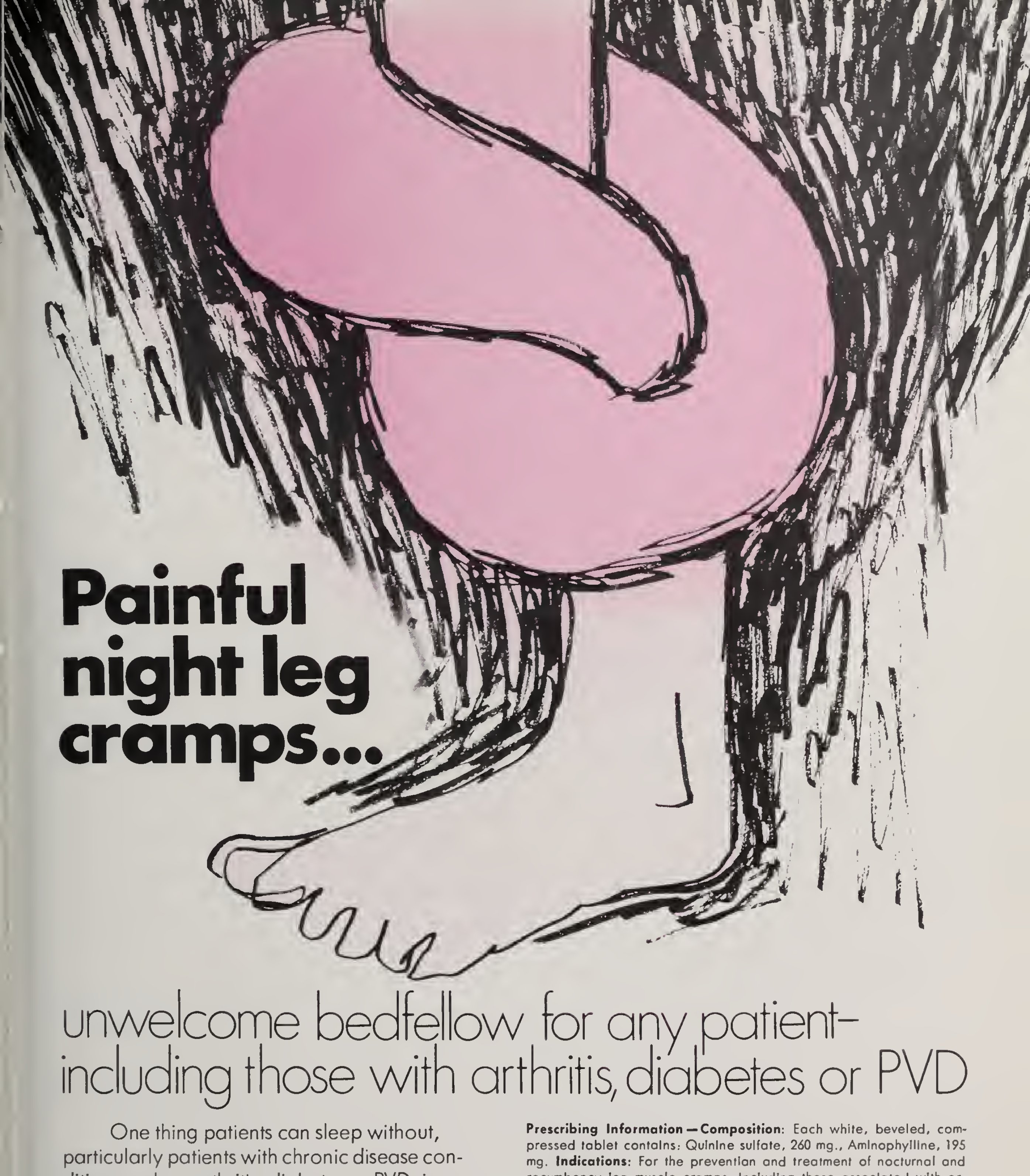
First "Statesman in Medicine"

(*Continued from page 644*)

of 150 articles on surgery. In addition to his textbook, "Surgical Diseases of the Chest," which appeared in a second edition in 1966, he has contributed various chapters on the subject to a number of textbooks. He is editor of *The Journal of Thoracic and Cardiovascular Surgery.*

The bronze bust of Dr. Blades was executed by Greek-born sculptor, Evangelos Frudakis, of Philadelphia, and will be the first to have a permanent place in the Hall of Statesmen in Medicine at Airlie House.



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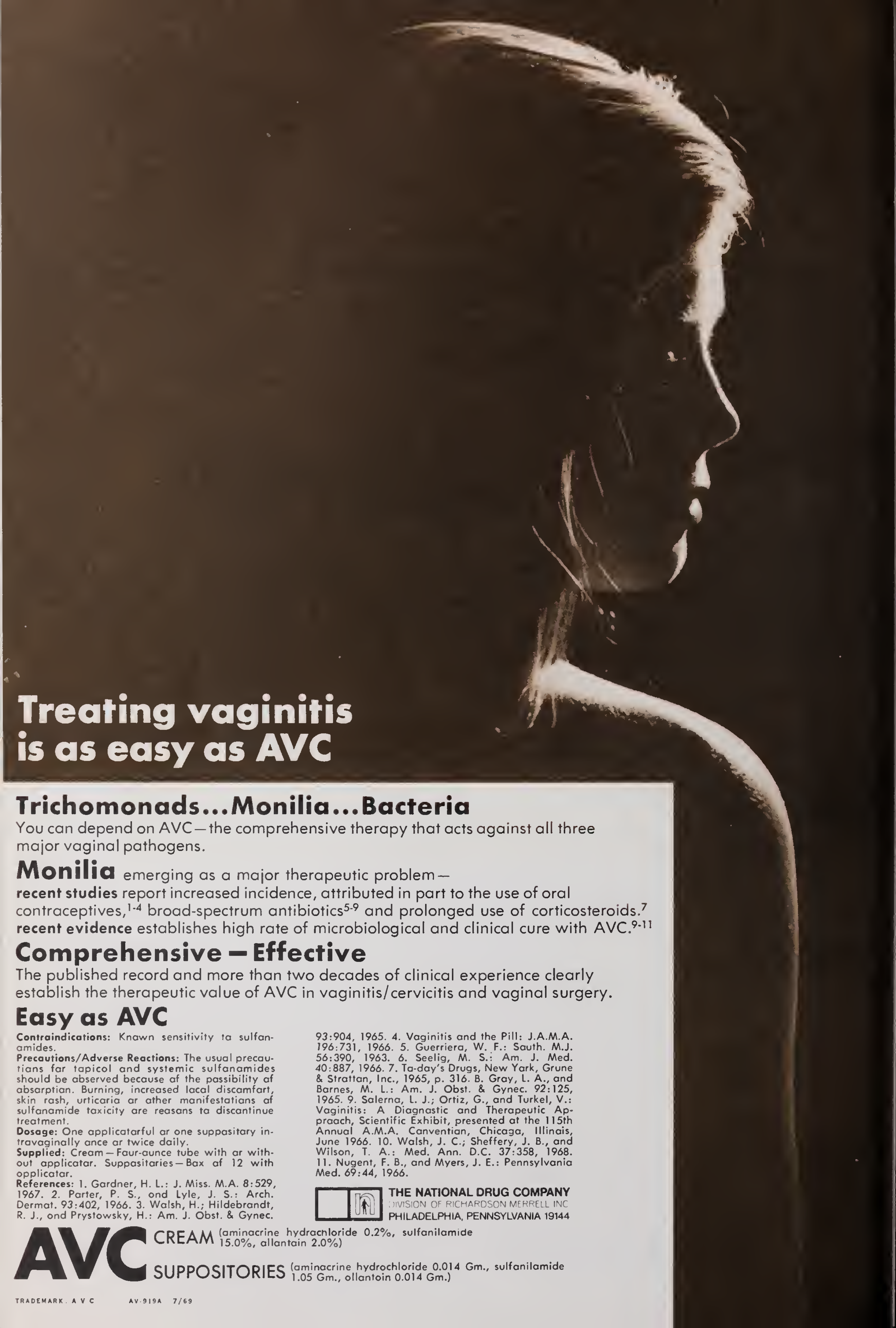

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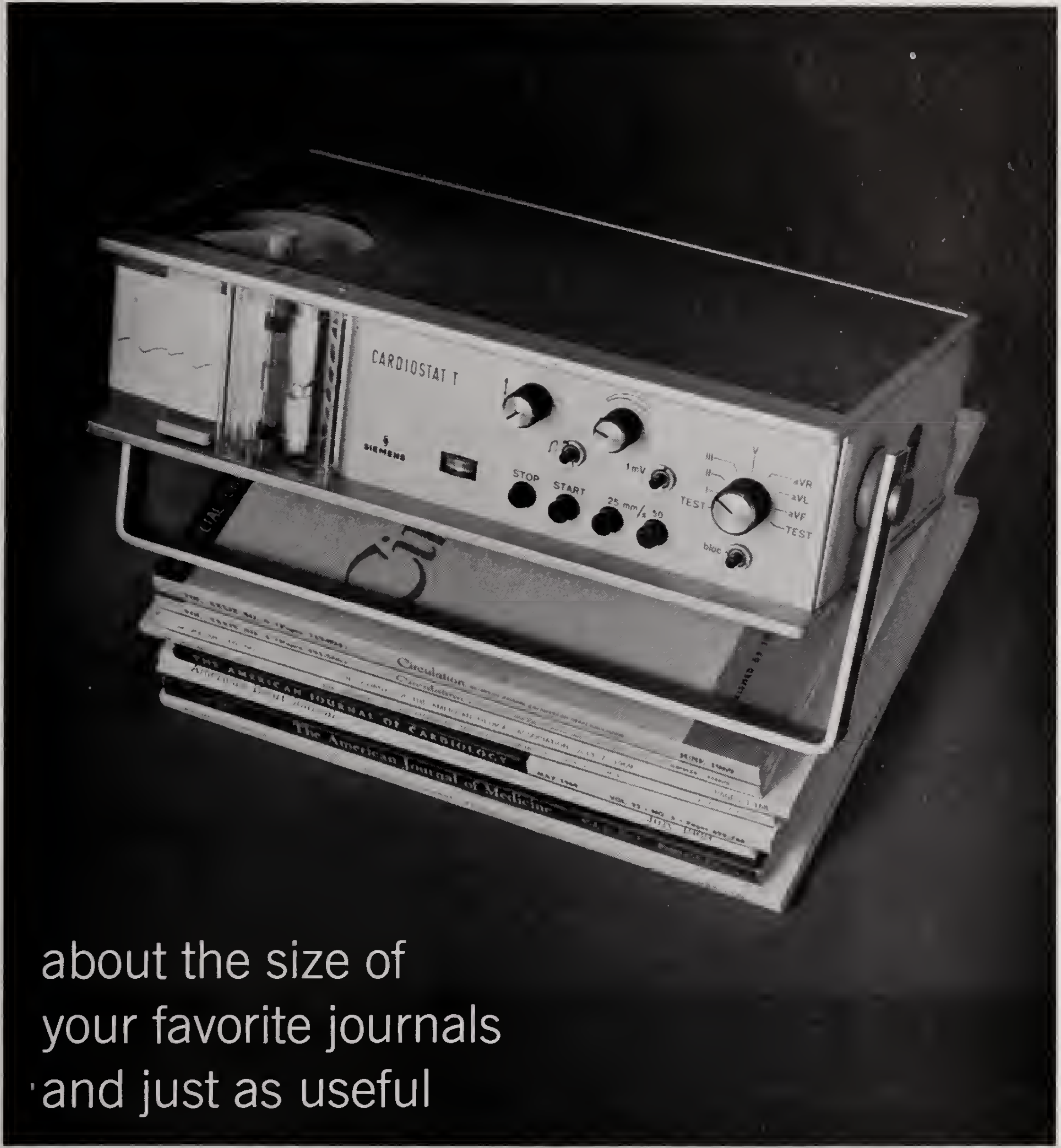
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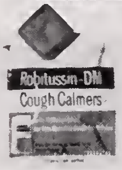

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November 30–December 3: American Medical Association (Clinical Convention). Denver. Address: Dr. Ernest B. Howard, Executive Vice President, 535 North Dearborn Street, Chicago, Ill. 60610.

December 6–11: American Academy of Dermatology. The Americana Hotel, Bal Harbour, Fla. Address: Dr. Frederick A. J. Kingery, Secretary-Treasurer, 2250 Northwest Flanders, Portland, Ore. 97210.

December 8–10: Southern Surgical Association. The Homestead, Hot Springs, Va. Address: Dr. David C. Sabiston, Jr., Executive Secretary, Duke University Medical Center, Durham, N. C. 27706.

January 11–14: Society of Thoracic Surgeons. Regency Hyatt House, Atlanta, Ga. Address: Dr. Ralph D. Alley, Secretary, Albany Medical Center Hospital, Albany, N. Y. 12208.

January 17–22: American Academy of Orthopedic Surgeons. Palmer House, Chicago. Address: Dr. Charles V. Heck, Executive Secretary, 430 North Michigan Ave., Chicago, Ill. 60611.

February 8–9: AMA Congress on Medical Education. Palmer House, Chicago. Address: Dr. C. H. William Ruhe, Secretary, AMA Council on Medical Education, 535 North Dearborn Street, Chicago, Ill. 60610.

February 25–March 1: American College of Cardiology. Rivergate, New Orleans, La. Address: Mr. William D. Nelligan, Executive Director, 9650 Rockville Pike, Bethesda, Md. 20014.

March 12–14: Southern Society of Anesthesiologists. Williamsburg Lodge, Williamsburg, Va. Address: Dr. Richard G. Zepernick, Secretary-Treasurer, Mercy Hospital, New Orleans, La. 70119.

March 16–18: American College of Surgeons (Sectional), Joint Meeting for Doctors and Nurses. Sheraton Park Hotel, Washington. Address: Communications Division, American College of Surgeons, 55 East Erie Street, Chicago, Ill., 60611.

March 16–20: American College of Allergists. Americana Hotel, Bal Harbour, Fla. Address: Mr. Eloi Bauers, Executive Vice President, 2100 Dain Tower, Minneapolis, Minn. 55402.

March 19–24: American Dermatological Association. Boca Raton Hotel, Boca Raton, Fla. Address: Dr. Barrett Kennedy, Secretary, Louisiana State University Medical School, 1542 Tulane, New Orleans, La. 70112.

March 20–22: American Psychosomatic Society. Washington Hilton Hotel, Washington. Dr. Herbert Weiner, Secretary-Treasurer, 265 Nassau Road, Roosevelt, N. Y. 11575.

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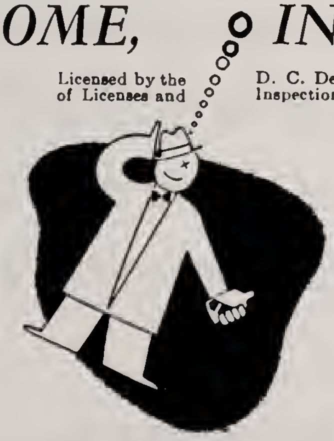

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Precautions: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
Dosage: 1 Extentab morning and evening.
Supplied: Bottles of 100 and 500.

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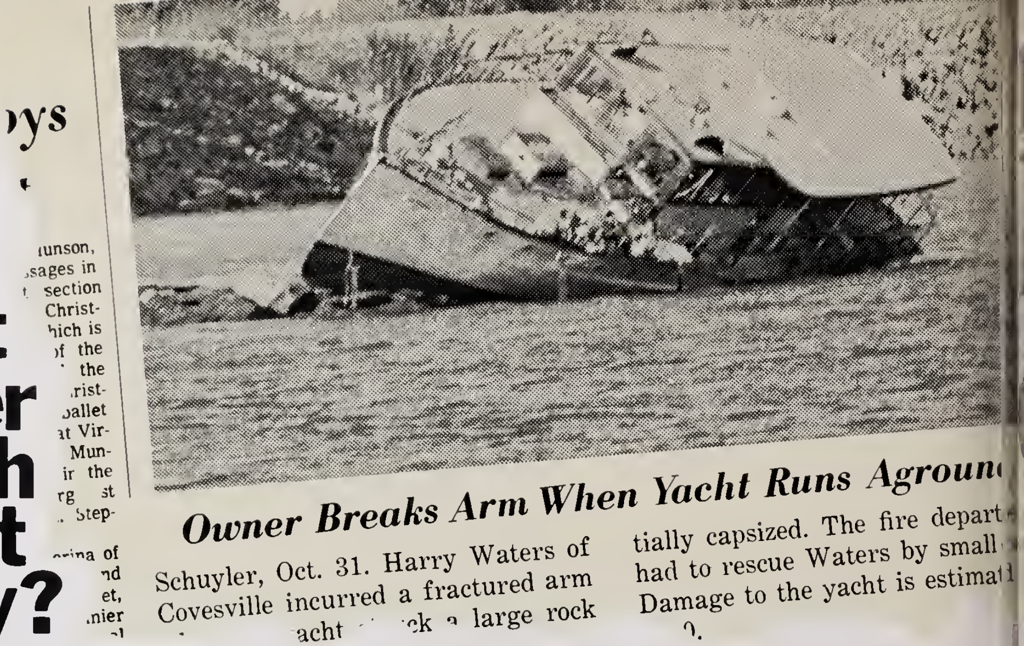

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Owner Breaks Arm When Yacht Runs Agroun

Schuyler, Oct. 31. Harry Waters of Covesville incurred a fractured arm acht ck a large rock

tially capsized. The fire depart had to rescue Waters by small Damage to the yacht is estimat

Hasn't the skipper had enough excitement for one day?

For the patient who has been through an accident, the worry and anxiety following the mishap may actually heighten the perception of pain. This is why there's a classic ¼ grain *sedative* dose of phenobarbital in Phenaphen with Codeine—to take the nervous "edge" off, so the rest of the formula can control the pain more effectively.

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The compound analgesic that calms instead of caffeinates

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Usual Adult Dosage: As a daytime sedative, 15 mg. (¼ gr.) to 30 mg. (½ gr.) t.i.d. or q.i.d.

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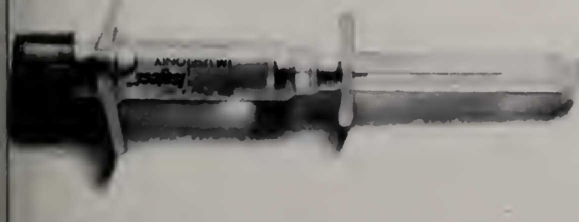
Terramycin® I.M.
(oxytetracycline)



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Contraindicated: In individuals hypersensitive to any of the components of this drug.
Warnings: If renal impairment exists, even usual doses may lead to excessive systemic accumulation and possible liver toxicity. In such patients, lower than usual doses are indicated and for prolonged therapy oxytetracycline serum level determinations may be advisable.
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Use of oxytetracycline during the last trimester of pregnancy, neonatal period and early childhood may cause discoloration of teeth. This effect occurs mostly during long-term use of the drug, but it has also been observed in usual short-treatment courses.
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Precautions: Use of broad-spectrum antibiotics occasionally may result in overgrowth of nonsusceptible organisms. Where such infections occur, discontinue oxytetracycline and institute specific therapy.
As with all intramuscular preparations, Terramycin Intramuscular Solution should be injected well within the body of a relatively large muscle. *Adults:* The preferred sites are the upper outer quadrant of the buttock (i.e., gluteus maximus), or the mid-lateral thigh. *Children:* It is recommended that intramuscular injections be given preferably in the mid-lateral muscles of the thigh. In infants and small children the periphery of the upper outer quadrant of the gluteal region should be used only when necessary, such as in burn patients, in order to minimize the possibility of damage to the sciatic nerve.
The deltoid area should be used only if well developed such as in certain adults and older children, and then only with caution to avoid radial nerve injury. Intramuscular injections should not be made into the lower and mid-thirds of the upper arm. As with all intramuscular injections, aspiration is necessary to help avoid inadvertent injection into a blood vessel.
Increased intracranial pressure with bulging fontanelles has been observed occasionally in infants receiving therapeutic doses of the drug, but such signs and symptoms have disappeared rapidly on cessation of treatment with no sequelae.
Adverse Reactions: Subcutaneous and fat-layer injection may produce mild pain and induration which may be relieved by an ice pack. Very mild gastrointestinal disturbances, not requiring discontinuance of the drug, may occur occasionally. Allergic reactions, including anaphylaxis, rarely have been observed.
Dosage: *Adult:* The optimal dosage varies, depending on the type and severity of infection. Unless otherwise specified, a dose of 100 mg. every 8 to 12 hours, or a single daily dose of 250 mg. should be adequate for the treatment of most mild or moderately severe infections. In severe infections, 100 mg. every 6 to 8 hours, or 250 mg. every 12 hours may be necessary.
Serum levels obtained by the recommended dosages are comparable to those provided by the oral dosage of 1 to 2 Gm. daily in adults. Antibiotic therapy should be continued for at least 24 to 48 hours after all symptoms and fever have subsided.
In certain diseases specific courses of therapy may be recommended as a general guide. In primary and secondary syphilis for example, the daily administration of 2 Gm. oxytetracycline, orally, in divided doses for two weeks has given good results. In cases of gonococcal infection two intramuscular injections of 250 mg. each, or one intramuscular injection of 250 mg. combined with one gram given orally as a single dose, will usually suffice, but repetition of this therapy will be required in an occasional case.
In the treatment of hemolytic streptococcal infections, therapy should continue for at least 10 days to prevent development of rheumatic fever or glomerulonephritis. In the treatment of staphylococcal infections indicated surgical procedures should be carried out in all cases.
Pediatric: A dosage of 3 mg./lb./day in two doses has been found satisfactory in the treatment of most mild to moderately severe infections. For more severe infections, higher dosages may be indicated and should be adjusted accordingly.
Terramycin Intramuscular Solution provides maximum absorption and patient toleration with minimal local irritation.
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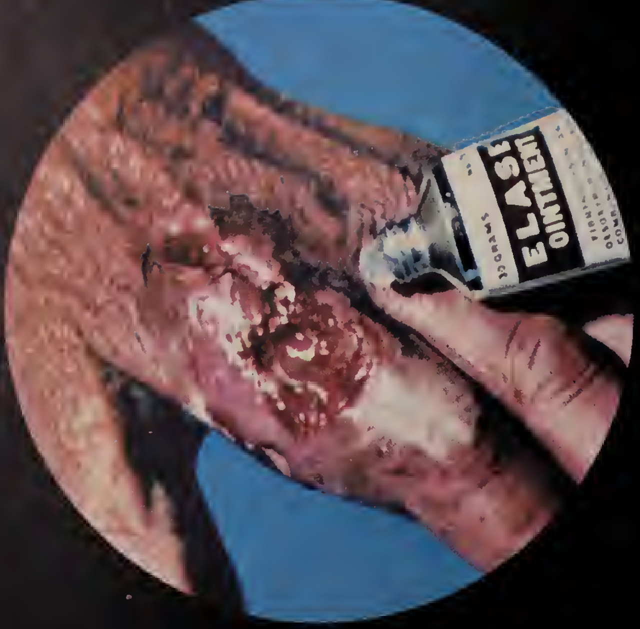
More detailed professional information available on request.

this ulcer did not heal...until its surface was cleared of dead tissue and debris



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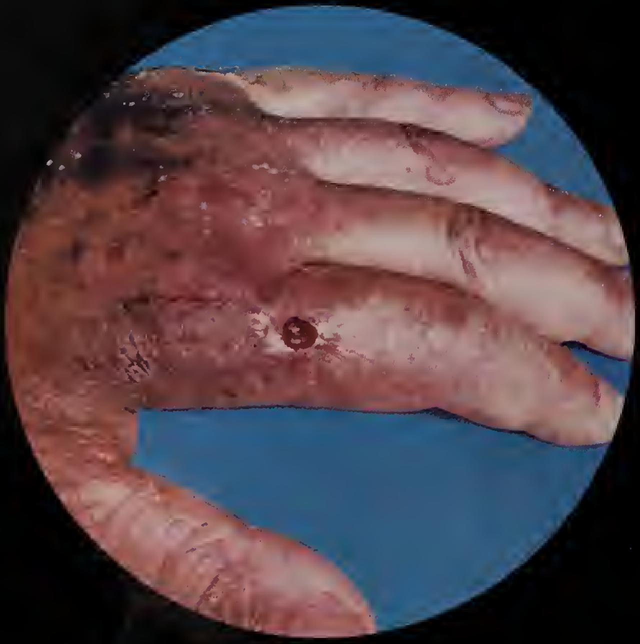
ELASE Ointment is applied to a deep ulceration of a finger.



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Parke, Davis & Company, Detroit, Michigan 48232

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December
1969

VOLUME XXXVIII • NUMBER 12

Liver Resection for Hemobilia
P. E. Franco, M.D., and H. H. Balch, M.D.

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Domenic E. Sabatini, M.D.

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Therapy of Ovarian Carcinoma
Stanley A. Schwartz, M.D.

Detection of Disease in Young Men
N. Thomas Connally, M.D.

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Merry Christmas

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Happy New Year

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THE MEDICAL SOCIETY
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DISTRICT OF COLUMBIA

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Usage In Pregnancy: Use in pregnancy, nursing mothers and women who might bear children only when potential benefits have been weighed against possible hazards.
Note: The iodine in isopropamide iodide may alter PBI test results and will suppress I^{131} uptake; discontinue 'Ornade' one week before these tests.
Adverse Reactions: Drowsiness; excessive dryness of nose, throat or mouth; nervousness; insomnia. Other known possible adverse reactions of the individual ingredients: nausea, vomiting, diarrhea, rash, dizziness, fatigue, tightness of chest, abdominal pain, irritability, tachycardia, headache, incoordination, tremor, difficulty in urination. Thrombocytopenia, leukopenia and convulsions have been reported.
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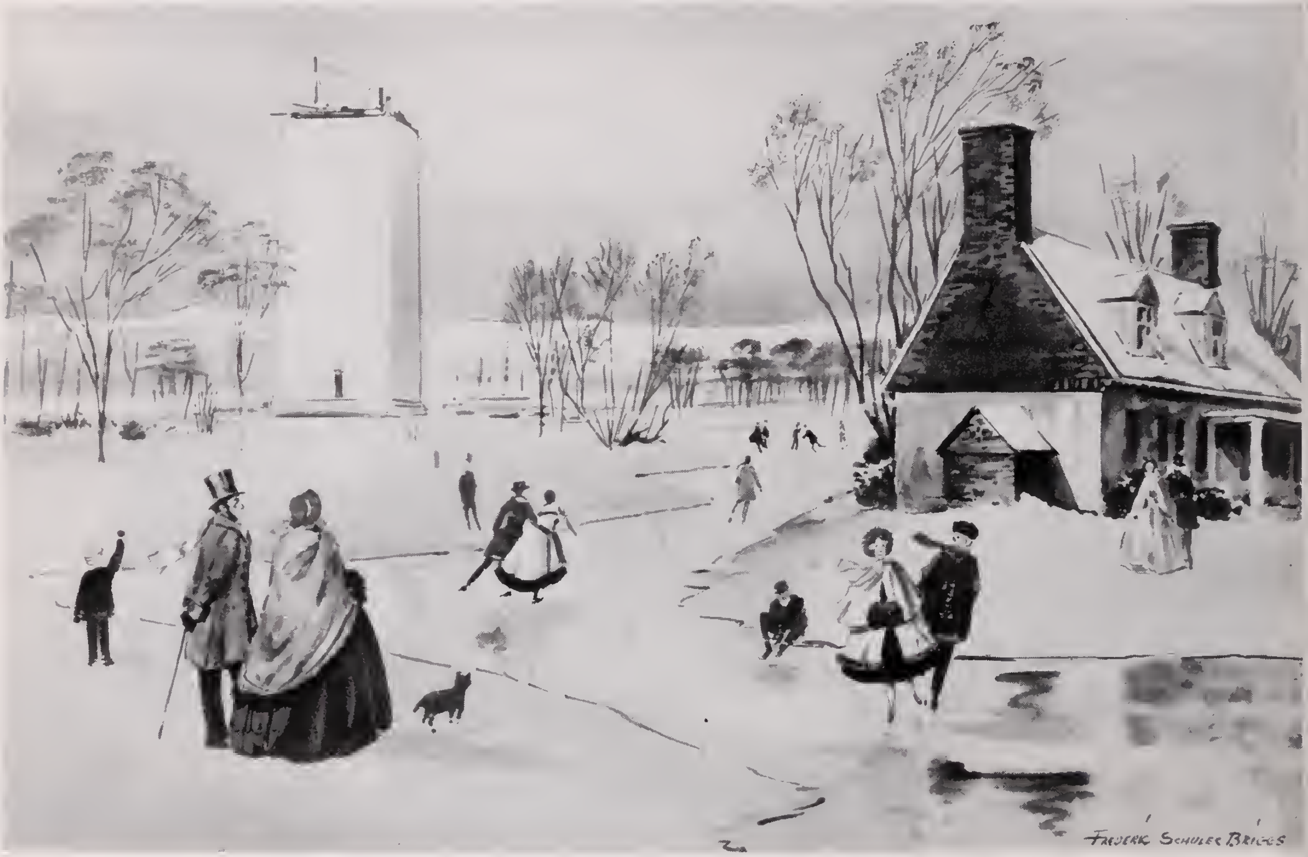
Wishing You
a Merry Christmas
and a Happy New Year



Ice skating near the partially completed Washington Monument, circa 1866.

After the first one hundred and fifty feet, the Washington Monument stood unfinished from 1854 until the centennial year 1876 when work on the structure was resumed. The Washington Monument was opened to the public in 1888.

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o guard susceptible patients against intestinal monilial overrowth during broad-spectrum therapy—the protection of ystatin is combined with demethylchlortetracycline in ECLOSTATIN.

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ontraindication: History of hypersensitivity to demethylchlortetracyine or nystatin.

arning: In renal impairment, usual doses may lead to excessive accumlation and liver toxicity. Under such conditions, lower than usual doses re indicated, and, if therapy is prolonged, serum level determinations ay be advisable. A photodynamic reaction to natural or artificial sunght has been observed. Small amounts of drug and short exposure may roduce an exaggerated sunburn reaction which may range from eryema to severe skin manifestations. In a smaller proportion, photollergic reactions have been reported. Patients should avoid direct xposure to sunlight and discontinue drug at the first evidence of skin scomfort. Necessary subsequent courses of treatment with tetracyines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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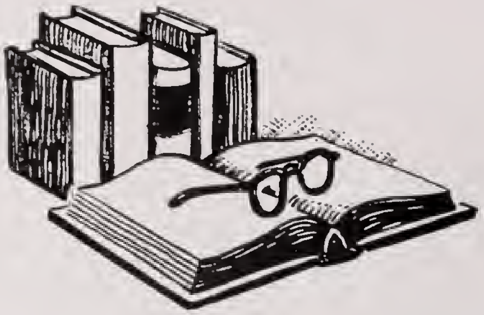

Book Reviews

Ptosis. Crowell Beard, M.D. Price, $22.50. Pp. 241, with 714 illustrations. Medical illustrations: Joan Esperson. Photographic editing and printing: Diane Beeston. St. Louis: Mosby, 1969.

Ptosis is a subject with extensive representation in the ophthalmologic literature. Unfortunately, it has been difficult hitherto to find a comprehensive discussion of the subject under one cover. One is forced to look hither and yon for the appropriate article.

Dr. Beard has compiled an excellent review of the subject with a very fundamental approach based on a thorough understanding of the surgical anatomy. The outstanding feature of this work is the editoralizing which Dr. Beard does in evaluating the various surgical procedures; he has a large bag of tricks and specific indications for their use. The bias he exhibits for or against an individual procedure is based on a rich personal experience which the reader will greatly appreciate.

The 714 illustrations are useful to anyone who intends to extend his surgical experience in the correction of ptosis.

This book belongs in the library of any ophthalmologist undertaking the repair of droopy lids.

Mervin H. Zimmerman, M.D.

Alimentary Tract Roentgenology, Volumes 1 and 2. Edited by Alexander R. Margulis, M.D., and Joachim H. Burhenne, M.D., with 47 contributors. Price per set, $65,00. Pp. 1203, with 1,414 illustrations. St. Louis: Mosby, 1967.

The authors are to be commended on a magnificent publication covering gastrointestinal roentgenology. They have covered the subject quite intensively in 2 volumes, with 1,414 illustrations. The contributors to these volumes are among the most eminent in radiology and associated medical fields. Each section has been written by a specialist in his particular area or by someone who has made extensive contributions to the literature in a special field.

Volume 1, in addition to the chapters on specific portions of the gastrointestinal tract, includes a chapter on "General Considerations" wherein a large amount of material which has been scattered throughout the literature is collated in an excellent fashion. Such items as contrast materials, including special barium preparations, are discussed in detail.

The various chapters on specific types of gastrointestinal examinations include sections by physicians who have done particular study in given areas such as malabsorption syndromes, pancreatic examinations, cholangiography, and all of the usual areas discussed in a book of this type, as well as many unusual ones. An excellent section on alimentary tract roentgenology from the viewpoint of the gastroenterologist is included in Volume 1.

Volume 2 presents further extensive discussions of the various regions included in the gastrointestinal examination, as well as special procedures, and a chapter on pediatric roentgenology.

The volumes are profusely illustrated with excellent reproductions and with diagrams where necessary. This work is not merely a recitation of radiologic criteria for diagnosis, but it is radiology at its highest level presented in a clinical framework.

This work is well worth inclusion in the library of radiologists, gastroenterologists, and other physicians interested in the gastrointestinal radiologic diagnosis.

George Tievsky, M.D.

Genetics and Counseling in Medical Practice. Leonard E. Reisman, M.D., and Adam P. Matheny, Jr., Ph.D. Price, $12.75. Pp. 215, with 86 illustrations. St. Louis: Mosby, 1969.

This volume has been written "in order to provide a broad coverage of information that the family physician can use to help people seeking genetic advice." It is not intended to be an exhaustive treatise on medical genetics, such as Victor McKusick's "Human Genetics."

In the first 4 chapters the authors review the historical and the general techniques of investigation and counseling. The fifth chapter discusses the relationship between genes and their expression as birth defects. The next 8 chapters include the specific relationship between genes and disease; some of the chapter headings are "The Inborn Errors," "Genetics and Cancer," and "Sex Linked Disorders." This material is lucidly presented. The final chapter includes a list of the genetic counseling facilities throughout the United States as well as a brief look into the future of genetic counseling. Selective readings follow each chapter, and there is a list of general references before the index.

When one considers the fact that "1 in 10 families experiences the birth of a child with an immediate serious hereditary disease," he has some appreciation of the frequency of the need of some form of genetic

(*Continued on page 10*)

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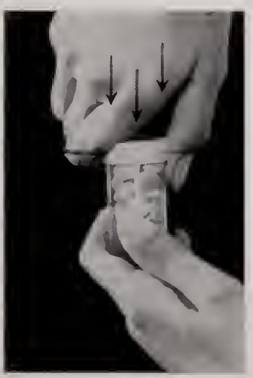

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Book Reviews

(*Continued from page 8*)

counseling. And yet "a spontaneous genetic change occurs in 1 out of approximately 50,000 genes." It is estimated that each ovum and sperm has about 50,000 genes. Another way to express this is that any 1 gene will experience a spontaneous change in every 100,000 human generations, or once in every 2 million years.

The real thrust of the authors is to persuade their medical colleagues, as well as anyone else who does genetic counseling, to evaluate fully the problem. First, research the family in depth; second, research the literature; third, give the family or individuals who are seeking advice an intelligible, intelligent consultation.

This book is worthy of being in the library of any medical student, pediatrician, obstetrician, internist, or other interested party only if he will study its contents rather than use it as a bookshelf space-filler.

Steele F. Stewart, Jr., M.D.

A Synopsis of Contemporary Psychiatry, 4th ed. George A. Ulett, M.D., Ph.D., and D. Wells Goodrich, M.D. Price, $9.50. Pp. 340. St. Louis: Mosby, 1969.

This is a very useful handbook which can be "a concise pocket compendium for the busy physician." It could also be quite useful for anyone on the mental health team.

The handbook is well written and outlined and includes a history of psychiatric thought.

Of special interest is the section on management of the suicidal patient and psychiatric treatment in general. An eclectic approach is used which is also very meaningful in this day and age of overspecialization. Simplification and "common-sense psychiatric terms and practices" are emphasized.

With the development of hundreds of new community mental health centers, many workers are being drawn into the field of mental health. This handbook can serve as an excellent introduction to this complex field for the beginning medical student, nurse, or mental health worker. I recommend it highly for this purpose and to any layman as a comprehensive guide to contemporary psychiatry.

R. A. Frank, M.D.

Circulatory and Respiratory Mass Transport. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Julie Knight. Price, $12.50. Pp. 310, illustrated. Boston: Little, 1969.

This book covers a symposium on the biophysics of movement of fluid in the interstitial spaces, the movement of blood components in the small blood vessels, and the movement of air and particulates in the respiratory tract. It has nothing to do with cardiorespiratory problems involved in the transportation of large numbers of individuals.

That it is possible to present some of this material in a fashion which is both intelligible and lively is shown by Professor A. C. Burton's essay on the mechanics of the red cell in relation to its carrier function. He discussed optimal design as a practical problem and shows why it is necessary to package the hemoglobin in cells and how the red cell membrane—size, shape, concentration and aging—and the capillary size fulfill their functional requirements. West's "Pulmonary Capillary Flow" comes off fairly well, but a paper such as "Motion in Narrow Capillaries from the Standpoint of Lubrication Theory" is typical of the highly mathematic and technically specialized approach of the volume.

The symposium is not likely to prove intelligible, much less useful, to the generalist or to the clinical specialist in cardiology or pulmonary diseases.

Harold M. Silver, M.D.

Adrenergic Neurotransmission: Ciba Foundation Study Group No. 33. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Price, $4.50. Pp. 123, with 12 illustrations. Boston: Little, 1968.

This little volume is another in the splendid series of small conference publications of the Ciba Foundation Study Group activities. This is the product of Study Group No. 33 and concerns the proceedings of a meeting held in honor of U. S. Von Euler, chaired by Sir Lindor Brown. The format of the volume is the usual Ciba plan of discussions by workers well known and active in the field, each case followed by a transcribed discussion participated in by all members of the study group. These discussions are some of the highlights of these volumes, along with the data presented formally by the workers.

Among the high points of this volume are the chapter on the "Physiological Regulation of Noradrenalin Biosynthesis," by Dr. Sidney Udenfriend of the National Institutes of Health, and the short chapter on the application of fluorescence histochemical techniques, entitled "Histochemical Studies of Adrenergic Neurotransmission," by Dr. T. Malmfors of the Karolinska Institute in Stockholm. Dr. Malmfors explores some of the interactions of catecholamine depletion by reserpine, restitution of catecholamine content of adrenergic nerves with dopamine, and some studies regarding monamine oxidase activity in the adrenergic nerve. Professor L. L. Iversen discusses the "Role of Noradrenalin Uptake in Adrenergic Neurotransmission," Professor J. S. Gillespie, "The Role of Receptors and Adrenergic Uptake," and Dr. Julius Axelrod, from the Laboratory of Clinical Science, National Institute of Mental Health, hormones and electrolytes in the regulation of catecholamine metabolism.

I think that this volume can be recommended to anyone working in the field of neuropharmacology, particularly as it pertains to the adrenergic nervous system, and certainly to any of those individuals who are involved in the application or use of catecholamine depletion or inhibition in medicine or using agents which affect the responses of the adrenergic mechanisms.

John J. Canary, M.D.

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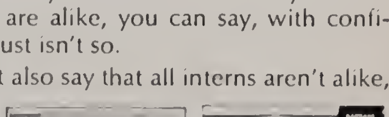

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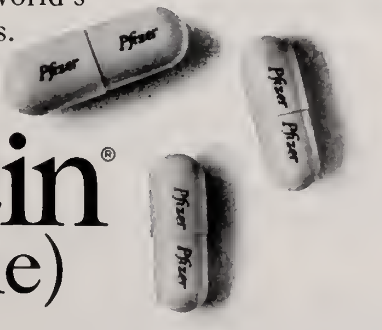

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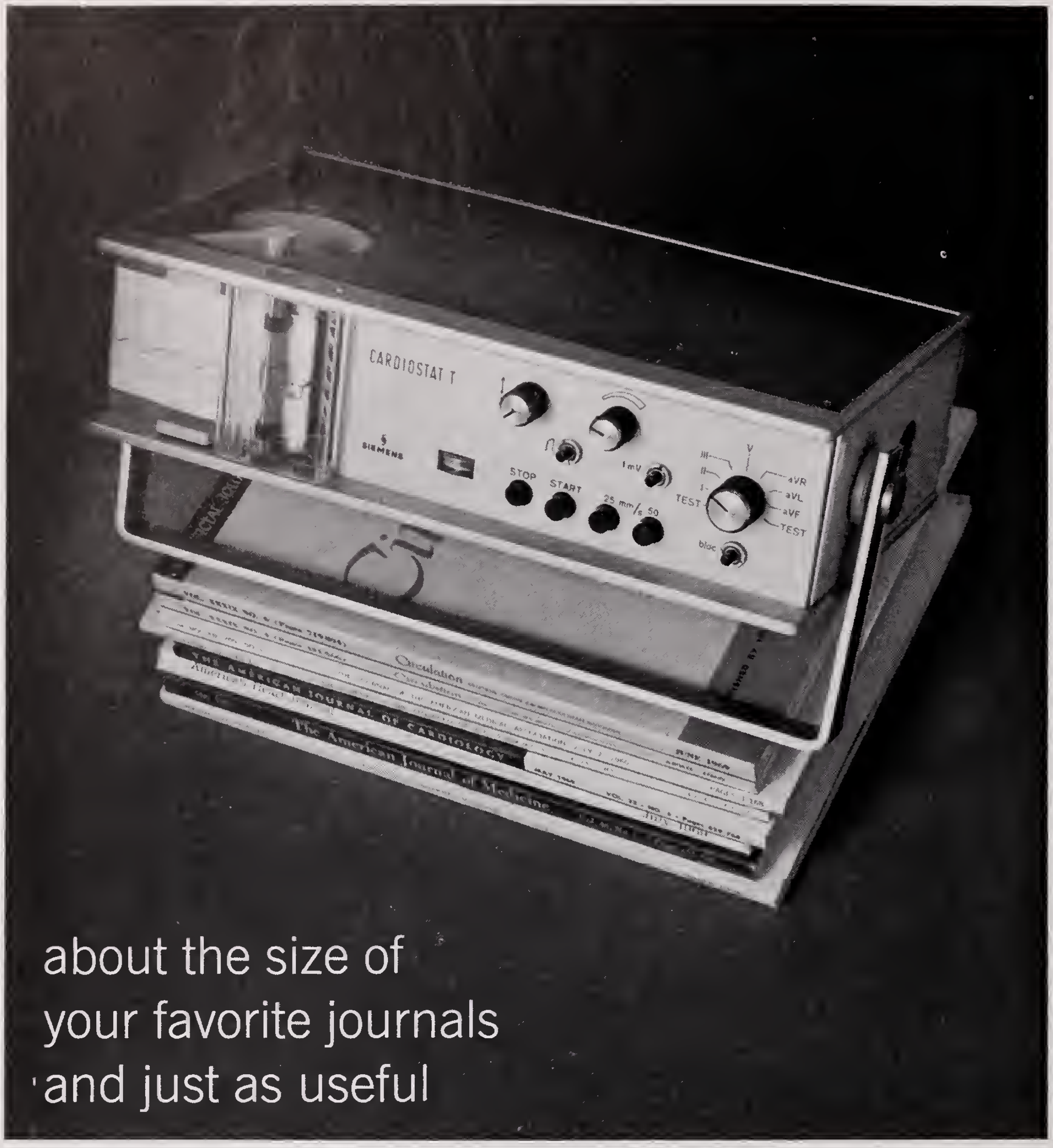

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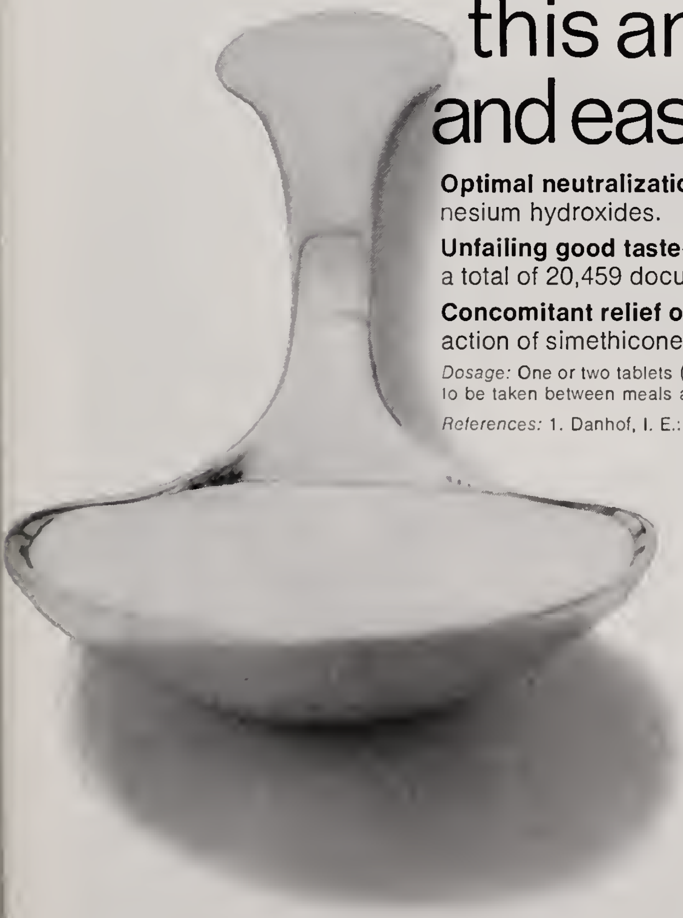

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Liver Resection for Hemobilia—An Uncommon Cause of Massive Gastrointestinal Hemorrhage

PAULO E. FRANCO, M.D.,* AND HENRY H. BALCH, M.D., F.A.C.S.†

BLEEDING INTO BILIARY DUCTS was first described by Owen in 1848,[1] but Sandblom[2] in 1948 first used the term hemobilia in reporting a case of upper gastrointestinal bleeding secondary to liver injury. Hemobilia is now recognized with increased frequency, and the following case report describes features usually found in this uncommon entity.[3,4]

Report of Case

A 47-year-old woman was first admitted to the medical service with a 3-week history of crampy periumbilical pain which occurred about 15 minutes after meals. This was associated with nausea and vomiting. A small amount of blood was noticed in the vomitus 3 times. The history was otherwise not pertinent except for moderate alcoholic intake and arrested tuberculosis. The physical examination was within normal limits except for the presence of uterine fibroids. The admitting hematocrit was 24 per cent. The bleeding, clotting and prothrombin times were normal, as were serum electrolytes and liver chemistries. The patient was not jaundiced. Upper gastrointestinal X-ray examination and cholecystogram were reported as normal. A hematology work-up indicated an iron-deficiency anemia.

The patient was discharged from the hospital 10 days later without further symptoms or evidence of bleeding. Nine days after leaving the hospital she was seen in the Gynecology Clinic for evaluation of fibroids and was noted to be jaundiced. She complained of right upper abdominal pain and tenderness, and the liver appeared to be enlarged. She had been anorectic for 2 days, complained of a distaste for cigarettes, had had chills and vomiting with 1 small episode of hematemesis, and had noticed dark urine. She was readmitted to the hospital. The hematocrit was 26 per cent, the prothrombin time was 15 seconds (control 13 seconds), and the serum bilirubin 4.2 mg. (direct 2.9 mg.). The patient remained asymptomatic for 5 days and then complained of epigastric pain radiating to the back and had nausea and vomiting without blood. The serum bilirubin was 4.7 mg.; alkaline phosphatase, 64 King-Armstrong units; LDH, 330 units; SGOT, 320 units; serum amylase, 360 units (normal less than 180 units), and hematocrit 28 per cent. Gastric aspirate did not contain blood. Symptoms improved within 24 hours, and abdominal tenderness disappeared. The hematocrit dropped to 16.5 per cent, and 1,000 ml. of whole blood was transfused. Symptomatic improvement continued, and on the twelfth hospital day the hematocrit was 24 per cent and the serum bilirubin 1.5 mg. An oral cholecystogram failed to visualize the gallbladder on 2 studies.

The patient had a massive hematemesis on the nineteenth hospital day and became hypotensive. A surgical consultation was called for the first time. She was treated with iced saline gastric lavage and blood replacement with improvement. A clinical impression of hemobilia was made, and liver angiography and isotope scan were decided upon in the hope of localizing the site of bleeding. Before these studies could be done the patient again bled massively from the upper gastrointestinal tract, and emergency surgery was done. The findings were free blood in the duodenum, small and large bowel, chronic pancreatitis, and a tense, dark, edematous gallbladder. A gastrotomy failed to show a source of bleeding, but on opening the duodenum blood was seen pouring from the terminal common bile duct.

A cholecystectomy was done, but examination of the opened gallbladder, which was full of blood, failed to reveal stones or a source of bleeding. Exploration of the common bile duct established that blood originated in the left hepatic duct system. The liver, however, appeared normal, and there was no evidence of hepatic-artery aneurysm. The bleeding ceased following intraductal irrigation with saline, and a T-tube was placed in the common bile duct with the upper limb in the left hepatic duct. The operation was terminated following a liver biopsy.

The histologic diagnosis was "fibrosis, hemorrhage, acute and chronic inflammation of portal areas" and "acute and chronic hemorrhagic cholecystitis and

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* Instructor in Surgery, Georgetown University School of Medicine; address: Georgetown University Surgical Division, District of Columbia General Hospital, Washington, D. C. 20003.

† Clinical Professor of Surgery, Georgetown University School of Medicine; Director, Georgetown University Surgical Division, District of Columbia General Hospital.

cholangitis." The postoperative course was relatively benign for 9 days, during which time a liver isotope scan was reported as normal, as were 2 T-tube cholangiograms.

The patient complained of vague abdominal discomfort and pain on the tenth day and 3 days later of moderately severe right upper abdominal pain. Shortly thereafter she vomited blood and became hypotensive. Fresh blood drained freely from the T-tube. Following resuscitation an emergency laparotomy revealed free blood draining from the left hepatic duct, and a left hepatic lobectomy was done. The postoperative course was benign, and the patient was discharged from the hospital on the fifteenth day after surgery. There was no gross abnormality of the resected liver nor any apparent bleeding source. The histologic diagnosis was "fatty degeneration, hepatic necrosis, acute sinusoidal congestion and hemosiderosis." The T-tube was removed 6 weeks after surgery following the demonstration of a normal cholangiogram. The patient has now been followed for 2 years without further bleeding from the gastrointestinal tract.

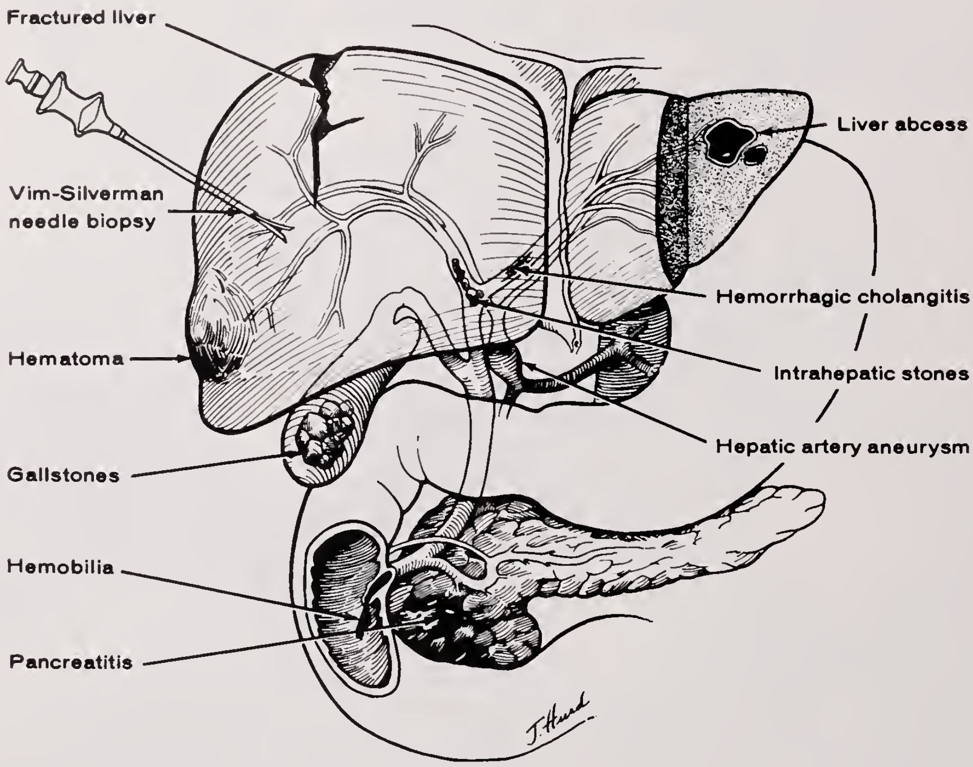

FIG. 1. Causes of hemobilia.

Discussion

Hemobilia is an uncommon cause of gastrointestinal bleeding and is usually not diagnosed preoperatively. It results from a hepatic artery-bile duct fistula which may be due to one of several causes (figure 1). The most common is blunt trauma to the liver with delayed bleeding. Needle biopsy of the liver has also caused this complication. It may be seen with liver abscess or tumor necrosis, as a complication of an expanding intra- or extrahepatic-artery aneurysm, with gallstone erosion into the hepatic artery or its branches (either intra- or extrahepatic), or with cholelithiasis and cholecystitis. Hemobilia has been reported with tuberculosis of the liver and with chronic pancreatitis. Sometimes no bleeding site is found as in our case. The history is characteristically that of repeated gastrointestinal bleeding for which a source cannot be found in the gastrointestinal tract. If this is associated with pain resembling biliary colic and jaundice, hemobilia is a good possibility, especially if there has been a history of recent trauma. An isotope scan of the liver may reveal a cold area of selective hepatic arteriography indicating the site of hemorrhage.

Usually the diagnosis is made at abdominal laparotomy at the time of bleeding. A distended, dark-colored gallbladder should suggest retained blood, and in the absence of other obvious causes of bleeding cholecystectomy should be done and the gallbladder opened. If a probable source of bleeding is not revealed in the gallbladder the common bile duct should be opened and the hepatic ducts explored by catheter irrigation with saline. An extrahepatic-duct source of bleeding may be apparent or, as was true in our case, blood may be seen to drain from the right or left lobe of the liver. An operative cholangiogram may be helpful in defining a localized lesion. The subsequent management depends on the findings. Suture ligature of an intrahepatic arterial-bile-duct fistula as may occur following needle biopsy of the liver may be adequate. At other times, drainage of an intrahepatic hematoma or abscess with packing of the cavity may suffice. A limited hepatic resection may be required or a left or right hepatic lobectomy.

A left hepatic lobectomy is usually tolerated without difficulty, but resection of the right lobe is a more formidable procedure, although with a right thoraco-abdominal incision and good exposure this presents no major technical hazard. Lobectomy for an injured but otherwise normal liver is not associated with permanent metabolic derangements, but the same may not be true if the margin of liver reserve is not adequate because of preëxisting parenchymal disease.[5] Following hepatectomy the serum albumin falls, the serum globulin rises (after a transient fall), cholesterol and cholesterol esters fall, SGOT and SGPT rise, bromsulfalein retention is increased, and serum bilirubin rises. All of these return toward the preoperative level by the third postoperative week. Thereafter, in the noncirrhotic patient there is continued improvement in liver function to normalcy, whereas in the surviving cirrhotic patient there is no further improvement. In cirrhotic patients not surviving hepatectomy, serum albumin remains low, cholesterol esters fall further, bromsulfalein retention increases, and serum bilirubin continues to rise. The noncirrhotic liver regenerates, but the cirrhotic liver is incapable of regeneration.

Summary

Hemobilia is a rare but well-defined clinical entity. Trauma, aneurysms of the hepatic arteries, tumors of the biliary tree, hepatic abscesses, gallstones, and cholecystitis are among the most common causes. Typical symptoms are right upper quadrant pain, jaundice, and repeated episodes of upper gastrointestinal bleeding. A case with a classic clinical picture has been presented. After several episodes of upper gastrointestinal bleeding the diagnosis of hemobilia from the left hepatic lobe was made at the time of abdominal exploration, and the patient was successfully treated by left hepatic lobectomy.

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Radiation Therapy for Neoplasms of the Testis

DOMENIC E. SABATINI, M.D.*

THE PURPOSE OF THIS PAPER is to evaluate and stress the importance of radiation therapy in the treatment of neoplasms of the testis, particularly embryonal-cell carcinoma and teratocarcinoma. Seminoma is excluded because the value of radiation therapy for it is well known. Patton[1] and Friedman[2] reported a 5-year cure rate of 96 and 95 per cent respectively. Murphy[3] stated that in his experience "no patient with pure seminoma, who showed no clinical evidence of metastases at the time of elective irradiation of the retroperitoneal lymph nodes, has died because of the seminoma."

The value of radiation therapy, on the other hand, is not universally recognized or it is completely discarded when the so-called "radioresistant" elements of embryonal-cell carcinoma or teratocarcinoma are present. Dixon and Moore[4] consider radiation therapy purposeless, and Patton[5] stated that "no hope can be offered any of these unfortunate individuals if they present inoperable disease." To contradict these statements the present inoperable case is reported.

Report of Case

D. R., a 25-year-old white man, married, with no children, had noticed enlargement of the right testicle for approximately 3 months. An intravenous pyelogram before surgery revealed prompt function of both kidneys. There was, however, irregularity of the upper part of the left psoas shadow, and the left upper ureter appeared slightly displaced laterally.

On March 27, 1963 a right orchiectomy with high ligation of the cord was performed. The right testicle measured 5 by 8 cm., and the testicular parenchyma was almost completely replaced by an abnormal grayish-white tissue. Microscopic examination revealed seminoma and embryonal-cell carcinoma. A lymphangiogram showed the presence of contrast medium only at the level of the lower abdomen due to blockage of the lymphatic pathway by metastatic disease (figure 1).

On April 3, 1963 a transperitoneal excision of the metastatic lymph nodes was attempted. Extensive metastatic disease was found along the inferior vena cava, the aorta and the renal veins. Most of the lymph nodes, particularly those adjacent to both kidneys, appeared "frozen" and unresectable. Only 10 lymph nodes were removed, and they all showed evidence of metastatic teratocarcinoma.

From April 10, 1963 through May 21, 1963 the patient received radiation therapy to the extensive, unresectable disease. On October 29, 1963 he developed symptoms of partial intestinal obstruction. A supine film of the abdomen showed numerous, slightly dilated loops of small bowel. A Cantor tube was inserted, and the abnormality of the left psoas shadow described originally was not detected at this time.

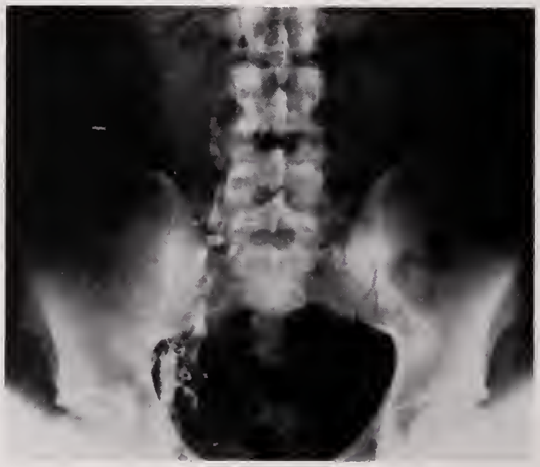

FIG. 1. Lymphangiogram showing the presence of contrast medium only in the lower abdomen due to blockage of the lymphatic pathway by metastatic disease.

An exploratory laparotomy was performed on November 18, 1963. An obstructing band was present between the colon and the small bowel. Adhesions were present between the jejunum and the aorta where the retroperitoneal area had been previously exposed. An obstruction was also present in the right lower quadrant of the abdomen at the level of the cecum. Lysis of the adhesions and a bypass with ileotransverse colostomy were performed.

The patient has been followed regularly and has remained completely asymptomatic since that time. He is free of disease more than 6 years following a diagnosis of an unresectable embryonal-cell carcinoma and teratocarcinoma of the testicle.

In addition to this inoperable patient, 13 more patients with embryonal-cell carcinoma or teratocarcinoma were evaluated between 1962 and 1968. Three of them with uncontrolled disease when first seen had had radical surgery but no radiation. One patient presented advanced inoperable disease and developed blood-borne lung metastases immediately following the course of X-ray therapy. Nine patients received therapy consisting of orchiectomy with high ligation of the cord, bilateral retroperitoneal lymph-node dissection and supervoltage irradiation directed to the retroperitoneal area. Only 2 patients received additional irradiation to the mediastinum, 1 "prophylactically," and the second to control local disease. In both cases the supraclavicular areas were included "prophylactically" in the field of irradiation.

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* Senior Attending Radiologist, Department of Radiation Therapy, Washington Hospital Center, 110 Irving Street, N. W., Washington, D. C. 20010.

Six of the 9 patients had metastatic lymph nodes at the time of surgery, and 3 had negative lymph nodes. Of the 3 patients with negative lymph nodes 1 received irradiation preoperatively. He presented urinary gonadotrophin above 10,000 I.U. before and after the orchiectomy. The urinary gonadotrophin disappeared following the course of irradiation, and surgery 6 weeks later was uneventful. The second patient also presented urinary gonadotrophin above 10,000 I.U., and the specimen showed involvement of the epididymis.

One patient with positive lymph nodes died 14 months following surgery and radiation therapy with generalized disease. A retrospective evaluation of the chest X-ray films obtained before surgery and radiation therapy revealed a small metastatic nodule in the lung parenchyma. This case, therefore, can hardly be considered a radiation failure.

Discussion

An inoperable carcinoma of the testis has been reported in detail and other treated cases have been mentioned. Two patients had advanced, unresectable disease when first seen, and 9 received elective therapy.

Of the 11 patients only 2 are dead. One had unresectable disease and developed blood-borne lung metastases immediately following the course of X-ray therapy. The second had, in retrospect, generalized disease before institution of radiation therapy.

Nine patients are alive and free of disease. One inoperable patient is alive and free of disease more than 6 years following the diagnosis.

Whether radiation therapy should be delivered following surgery, when the lymph nodes are reported negative, remains a controversial problem. I favor a combination of surgery and radiation even when the lymph nodes are reported negative because this usually means only that no tumor was seen by the pathologist in the sections from the lymph nodes which were removed.[6] There is always the possibility that small metastatic foci are missed at the time of surgery.

The results are very encouraging and do not support Patton's statement[5] that "although irradiation should be included in the treatment of these tumors, its value is difficult to assess."

The value of radiation therapy is also supported by the results of Host and Stokke.[7] They obtained a 5-year survival following orchiectomy and radiation alone of 66.7 per cent in embryonal carcinoma and 65.6 per cent in teratoma and teratocarcinoma. These results compete well with those obtained by Patton et al[8] following orchiectomy, retroperitoneal lymph node dissection, and radiation. The results of Host and Stokke are actually better in teratocarcinoma.

Supervoltage irradiation and better techniques might partially account for the good results. All of our patients were treated with supervoltage equipment (2 Mev, HVL 7.6 mm. Pb), and the tissues involved received an estimated tumor dose of 4,000 rads in 6 weeks.

Although this series is small it seems to favor the contention that irradiation plays a major role in the therapy of the retroperitoneal lymph nodes.

Summary

Different opinions exist concerning the value of radiation therapy in the management of neoplasms of the testis.[9-12] Seminoma is the only tumor for which there is complete agreement.

Eleven patients with embryonal-cell carcinoma or teratocarcinoma have been treated with radiation therapy between 1962 and 1968. Two were inoperable and 9 were in the operable stage. Nine of them, including 1 inoperable, are alive and free of disease.

The inoperable case, alive and free of disease for more than 6 years, has been reported in detail.

The follow-up for the recently treated patients is short, but a 2-year follow-up is significant in these neoplasms since most of the deaths occur during this time.[5]

The results obtained by other authors have been reviewed.

Our findings demonstrate the definite value of radiation therapy in the management of neoplasms of the testis other than seminoma.

(Continued on page 671)

Diagnosis and Treatment of Lipid Transport Disorders*

ROBERT I. LEVY, M.D.†

All the blood lipids circulate bound to specific proteins. When lipid transport is viewed in terms of these lipid transport proteins (lipoproteins) rather than in terms of any individual lipid (cholesterol, triglyceride), greater specificity and definition can be imparted to the study and understanding of lipid transport disorders.

The differentiation of hyperlipoproteinemia may be accomplished by sequential preparative or analytical ultracentrifugation. For most clinical purposes simpler electrophoretic systems are adequate. Using paper or agarose gel electrophoresis one can obtain patterns that correlate well with ultracentrifugal patterns and at a fraction of the cost. Lipoprotein electrophoresis on paper and gel is rapidly becoming a routine procedure offered by many commercial and hospital laboratories.

There are at least 5 abnormal lipoprotein patterns that may be associated with hyperlipidemia. Each pattern is distinguished by an increase or abnormality in 1 or more of the normal serum lipoproteins. The lipoprotein patterns are not necessarily specific for a single disease. They may be primary, but many are familial or secondary to a host of different acquired disorders. The abnormal patterns are accompanied by clusters of clinical manifestations that allow them to be considered different syndromes.

Type I. This lipoprotein pattern is indicative of an inability to clear dietary fat (chylomicrons). It is nearly always familial, and in its severe form is a rare disorder. The patients are usually young and have creamy plasma, lipemia retinalis, hepatosplenomegaly, eruptive xanthomata, and bouts of abdominal pain associated with ingestion of dietary fats. After standing in the cold a discrete cream layer forms in the plasma of these patients. Plasma cholesterols may be normal or elevated; triglyceride concentrations are grossly elevated (often above 5,000 mg. per cent). The familial disorder is recessively transmitted and is characterized by a deficiency in 1 or more of the enzymes involved in the clearance of fat from the circulation. Therapy is relatively simple. Diets low in fat result in a dramatic clearing of the hypertriglyceridemia and resolution of the associated abdominal complaints. There is no effective drug available now for the treatment of Type I. Supplementation of the diet with medium chain-length triglycerides (MCT) often makes the diet more palatable.

Type II or hyperbetalipoproteinemia. This is a common pattern found at all ages. It is characterized by a marked increase in otherwise normal beta lipoproteins. Though the plasma is almost always clear, cholesterol levels are often in the 300–600 mg. per cent range with normal or only modestly elevated plasma triglycerides. Type II patients may have xanthelasma, arcus juvenilis, and tendon and tuberous xanthomata. Of note is the associated premature coronary artery disease and the often striking family history of early death. This makes it important for all physicians to recognize that the Type II abnormality is often familial and is transmitted as a dominant trait with essentially complete penetrance. Though the Type II pattern may be secondary to excessive dietary cholesterol intake, myxedema, myeloma, liver disease or nephrosis, these causes can be quickly evaluated, and, when ruled out, a Type II patient's family should be screened for the patient's mother or father, and 50 per cent of the patient's siblings and children (diagnosable as early as age 1) will have hyperbetalipoproteinemia. Therapy for all of the secondary hyperlipoproteinemias should be directed at the acquired problem, i.e., thyroid replacement for myxedema. When this is not possible or the disorder is primary, specific therapy should be directed to the hyperlipoproteinemia. Dietary therapy for Type II emphasizes a reduction in cholesterol content to below 200 mg. per day (avoidance of eggs, many dairy products, and fatty meats) and consumption of increased amounts of polyunsaturated fats. Most of the drugs available for hyperlipoproteinemia have little effect. Cholestyramine, a bile-acid sequestrant, in doses of 16–32 Gm. per day, has resulted in impressive reductions in cholesterol and betalipoprotein levels. With a combination of a low-cholesterol diet and cholestyramine, lipid levels can often be brought into the normal range.

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† Head, Section on Lipoprotein, Laboratory for Molecular Diseases, National Heart Institute, National Institutes of Health, Bethesda, Md. 20014.

Type III. This is a relatively uncommon pattern associated with the presence in plasma of abnormal betalipoprotein forms. Patients have clear, cloudy, or milky plasma with elevations of both cholesterol and triglyceride concentrations into the 350–800 mg. per cent range. These patients are often seen in the third or fourth decade with planar xanthomata (orange-yellow lipid deposits in the creases of the palms of the hands) as well as tuberoeruptive (elbows, knees and buttocks) and tendon xanthomata. Commonly, both premature coronary and peripheral arterial disease occurs. This type is usually familial and is apparently transmitted as a recessive trait. Dietary therapy emphasizes calorie control and a diet balanced in fat, carbohydrate, and protein and low in cholesterol. Clofibrate, 2 Gm. per day, is effective, especially when coupled with the balanced therapeutic diet; it results in a complete normalization of plasma cholesterol and triglyceride concentrations, resolution of external xanthomatosis, and apparent improvement in peripheral vessel flow.

Type IV. This is a very common lipoprotein pattern, most frequently seen after the second decade of life and often associated with diabetes mellitus and premature atherosclerosis. It is characterized by an isolated increase in endogenous triglyceride (prebetalipoproteins). The plasma may be clear, cloudy, or milky depending upon the triglyceride concentration. Cholesterol levels are frequently normal. The patients usually have no external stigmata. The pattern sometimes reflects a familial disorder transmitted as a dominant with delayed expression. It may be that several different mutations are responsible. It is often, however, secondary to other metabolic disorders and whether primary or secondary is usually exacerbated by obesity. Dietary therapy emphasizes reduction to ideal body weight and reduction in the carbohydrate and alcohol content of the diet with a concomitant increase in the amounts of polyunsaturated fats. Diet therapy alone often results in total normalization of the plasma lipids. Drugs like clofibrate, D-thyroxin, and nicotinic acid have been variably effective.

Type V. This is frequently seen secondary to acute metabolic disorders like diabetic acidosis, pancreatitis, alcoholism, and nephrosis but may be familial. The patients usually become symptomatic after the age of 20 and may have all the features of Type I: creamy plasma, hepatosplenomegaly, and bouts of abdominal pain often with frank pancreatitis. They often have multiple abdominal scars after years of occult abdominal pain. They appear to be intolerant to both dietary and endogenous fat and have triglycerides in the 1,000–6,000 mg. per cent range with mildly to markedly elevated plasma cholesterols on an unrestricted diet. Abnormal glucose tolerance and hyperuricemia are frequently associated. Diet therapy emphasizes caloric restriction, reduction to ideal body weight, and a diet high in protein and low in carbohydrate and fat. Clofibrate, D-thyroxin, and nicotinic acid may all modestly reduce the triglyceride concentration but often not to a significant degree.

Summary

The importance of going beyond the simple determination of cholesterol and triglyceride should be apparent. Five different types of hyperlipoproteinemia have been briefly characterized and discussed. Each is associated with a specific lipoprotein pattern that may be familial or acquired. Each is associated with specific clinical and laboratory signs, and at least 3 of the types (II, III and IV) are associated with premature vascular disease. Each type responds differently to dietary manipulations and specific drug regimens. Perhaps for the first time it is now possible for the clinician to apply relatively specific therapy to the patient with a lipid transport disorder.

Triiodothyronine and Placebo in the Treatment of Obesity

A Study of Fifty-five Patients*

NELSON G. GOODMAN, M.D., F.A.C.P.†

THE PREVALENCE OF OBESITY in our affluent society has led to a renewed interest in its physiologic and clinical aspects and has provided the basis for a multimillion dollar industry,[1, 2] which outgrowth of the obesity problem attests to its refractory nature. Thus, in spite of widespread appreciation of the deleterious effects of excess weight and the current emphasis on physical fitness, no reliable method of treatment is recognized.

The present study was undertaken in the setting of a large closed-panel multispecialty group which is interested in preventive medicine. The initial intent was to provide help for a large number of patients who considered their obesity resistant to treatment. The opportunity presented itself to evaluate the role of triiodothyronine (T_3, Cytomel®) in near physiologic doses in the management of the overweight patient.

Methods and Materials

All subjects were members of Group Health Association, a prepaid medical-care organization, and were seen only by me for this study. Almost all of them remain members of Group Health under my personal care at the time of this writing. They entered the study either by referral from other doctors in the Group, by referral from other patients, or because the author saw them medically and advised weight reduction. All had made prior attempts to lose weight.

Each patient received an initial complete history and physical examination, electrocardiogram, chest X-ray film, complete blood count, urinalysis, and such other laboratory work as was deemed necessary. All but 10 had a normal PBI or RAI prior to treatment; the remainder were clinically euthyroid.

There were 2 parts to the study. In Part A patients were told that they were trying a new form of treatment for obesity and that initial results had been encouraging. They were given a copy of the 1,320 calorie diet described by Gordon et al,[3] which is high in protein, moderate in fat, and low in carbohydrate and salt. This was to be taken in 6 almost equal meals. The patients were advised that the treatment would be more efficacious if they began with a 48-hour fast, and almost all patients did so. Then they were to begin the diet and to start T_3 12.5 mcg. daily. All patients were also given a diuretic, either a thiazide orally or Thiomerin®, 2 c.c. I.M., once weekly. Some patients took the thiazide more often because of hypertension or fluid retention.

Patients were examined weekly, encouraged, and their diet and medication discussed. If there were no signs or symptoms of hyperthyroidism or other undesirable reactions, T_3 was increased by a 12.5 mcg. daily increment. Occasionally a patient was permitted to increase the dose without being seen for the week. If signs or symptoms suggestive of T_3 excess developed, the dose was reduced or held constant or the medication was stopped. The study was continued until the patient or I was satisfied with the weight loss, the patient stopped losing weight, the patient did not return, or undesirable signs or symptoms necessitated stopping the T_3. At this point the period of study was considered completed.

Patients who returned were then advised to continue to follow the general principles of the diet including refraining from excluded foods and eating several daily meals, keeping the total calories at a level such as to maintain or continue weight loss. They were asked to return at intervals of 3 to 6 months for evaluation. A few patients were started on thyroid extract (60–180 mg.) as maintenance therapy after completing the trial of

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* From the Department of Adult Medicine, Group Health Association, Inc., Washington, D. C.

† Clinical Instructor in Medicine, George Washington University School of Medicine; Senior Attending Physician, Washington Hospital Center; address: Group Health Association, Inc., 2121 Pennsylvania Ave., N. W., Washington, D. C. 20037.

T_3. All but 2 (L. J. and A. S.) stopped this medication within a few weeks or months; 1 patient (M. B.) continues to take T_3 50–75 mcg. daily.

In Part B of the study all methods and materials were similar to Part A, except that instead of T_3, patients were given white capsules. Each capsule contained either 12.5 mcg. of T_3 or a placebo, but the contents were not known to me. Alternate patients received one or the other capsule.

Follow-up weights were obtained on all patients except 1 in Part A and 1 in Part B a year or more from the start of treatment.

As a standard for comparison with the subjects, Smoothed Average Weights for Men and Women by Age and Height compiled by the Public Health Service in 1960–1962 were used.[4]

TABLE 1: Results of Treatment in Part A

Initials	Duration of Treatment Weeks	Maximum Dose of T_3 Mcg.	Initial Weight in Study Lbs.	Final Weight in Study Lbs.	Weight Change in Study Lbs.	Reason for Stopping Study	Weight after 1 Year Lbs.	Weight Change after 1 Year Lbs.
S. F.	13	175	210	180	−30	WLA	192	−18
L. J.	21	125	222	183	−39	DNR	220	−2
J. V.	18	150	220	179	−41	US	—	—
M. T.	16	125	213	178	−35	SLW	212	−1
S. W.	18	125	223	185	−38	WLA	206	−17
H. W.	13	125	173	163	−10	US	195	+22
D. K.	15	87½	167	159	−8	SLW	167	0
P. F.	3	12½	240	230	−10	DNR	165	−75
A. S.	13	100	192	158	−34	SLW	183	−9
E. S.	28	137½	187	164	−23	SLW	185	−2
G. W.	41	150	223	198	−25	SLW	172	−51
J. B.	5	75	226	203	−23	DNR	225	−1
L. F.	18	100	168	156	−12	US	170	+2
D. G.	23	125	204	170	−34	WLA	180	−24
C. G.	23	150	212	173	−39	WLA	185	−27
W. F.	18	100	260	258	−2	SLW	285	+25
P. E.	32	100	149	145	−4	DNR	141	−8
B. Z.	12	100	170	167	−3	SLW	165	−5
H. M.	17	50	278	272	−6	US	263 (see text)	−15
L. E.	20	150	264	242	−22	US	268	+4
M. R.	22	162½	287	248	−39	US	284	−3
L. R.	23	100	234	213	−21	DNR	218	−16
R. B.	6	75	256	247	−9	DNR	255	−1
M. M.	2	75	258	251	−7	DNR	285	+27
C. S.	8	112½	198	194	−4	DNR	195	−3
P. T.	16	50	211	195	−16	DNR	204	−7
M. B.	23	75	150	138	−12	DNR	136	−14
D. C.	16	87½	216	213	−3	DNR	212	−4
P. A.	5	50	179	169	−10	DNR	166	−13
AVERAGE	17	105	213	194	−19		205	−8
RANGE	2–41	12.5–175	149–287	138–272	−2 to −41		136–285	−75 to +27

WLA—Weight loss adequate
DNR—Did not return
US—Undesirable symptoms
SLW—Stopped losing weight

+ Indicates weight gain
− Indicates weight loss

Results

Of the 40 patients who began Part A of the study, 11 were eliminated—6 who failed to return at least once, 4 whose weights were not in excess of the standard used, and 1 with so much edema that loss of weight was impossible to evaluate. This left 29 patients (table 1), 20 females and 9 males, whose ages ranged from 20 to 60 years. Initial weights ranged from 149 to 287 pounds (average 213); they were, thus, from 9 to 76 per cent (average 36 per cent) above the standard weights. Six patients had mild hypertension, 2 had mild diabetes, and 1 had a history of myocardial infarction. Five patients were receiving reserpine (Serpasil®), 1 tolbutamide (Orinase®), and 1 phenelzine sulfate (Nardil®) during the period of study.

The patients were treated from 2 to 41 weeks (average 17). The maximum dose of T_3 varied from 12.5 to 175 mcg. (average 105 mcg.) daily.

All patients lost weight while taking T_3. The weight loss ranged from 2 to 41 pounds (average 19). Whereas only 3 patients had been within 11 per cent of the standard weight for their sex, height, and age before beginning T_3, at the completion of treatment there were 14 such patients.

Follow-up weights were obtained for all patients but 1 (J.V.) 1 year or more from the start of the study.* The average weight at that time had risen from 194 pounds at the completion of T_3 administration to 205 pounds. Thus at follow-up 22 patients still showed some weight loss, 5 showed a weight gain, and 1 was unchanged from the beginning of the study. Only 6, however, remained within 11 per cent of the standard weight, including the 3 who had begun the study less than 11 per cent overweight.

Of the 2 patients showing the greatest weight loss after 1 year (75 and 51 pounds respectively), the first (P.F.) had become a regular member of Weight Watchers and the second (G.W.) was receiving an anorexiant from me.

In Part B, 2 patients were eliminated from the Cytomel group and 4 from the placebo group because they failed to return at least once, leaving 13 patients who received T_3 and 13 who received placebo for study (tables 2 and 3). In the T_3 group there were 3 males and 10 females; in the placebo group there were 5 males and 8 females. The average ages for the groups were 44 (T_3) and 45 (placebo). There were 2 patients with mild hypertension in the T_3 group, 1 of whom was taking reserpine. In the placebo group 1 patient (E.J.) had mild hypertension and later was thought to have narcolepsy.

Initial weights averaged 214 pounds (range 170–297) in the T_3 patients and 224 pounds (range 159–300) in placebo patients. Thus, on the average both groups were 35 per cent above the standard weights (range 15–66 per cent for T_3 patients and 8–61 per cent for the placebo patients). The average length of treatment for the T_3 patients was 11 weeks (range 1–23) and for placebo patients, 8 weeks (range 2–15). The average maximum number of capsules was 5 for both groups (ranging from 25–87.5 mcg. of T_3 for the study group and from 1–10 capsules for the placebo group).

TABLE 2: Results of Treatment of Part B Group That Received T_3

Initials	Duration of Treatment Weeks	Maximum No. Capsules*	Initial Weight Lbs.	Final Weight in Study Lbs.	Weight Change in Study Lbs.	Reason for Stopping Study	Weight after 1 Year Lbs.	Weight Change after 1 Year Lbs.
R. S.	10	6	207	194	−13	DNR	215	+8
S. K.	1	2	206	206	0	DNR	215	+9
E. R.	7	3	214	212	−2	DNR	206	−8
M. M.	13	6	182	165	−17	DNR	170	−12
F. P.	10	6	279	280	+1	DNR	300	+21
C. J.	12	7	195	191	−4	US	224	+29
Y. B.	13	5	219	191	−28	US	194	−25
F. K.	14	5	214	214	0	SLW	208	−6
M. A.	11	6	170	155	−15	SLW	156	−14
F. V.	23	7	196	185	−11	US	225	+29
A. B.	15	4	220	208	−12	DNR	221	+1
E. R.	8	2	184	183	−1	US	174	−10
R. O.	10	4	297	294	−3	DNR	284	−13
AVERAGE	11	5	214	206	−8		215	+1
RANGE	1–23	2–7	170–297	155–294	+1 to −28		156–300	+29 to −25

* Each capsule contains 12.5 mcg. of T_3.
DNR—Did not return
US—Undesirable symptoms
SLW—Stopped losing weight

− Indicates weight loss
+ Indicates weight gain

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* H. M., who had had a previous myocardial infarction, was weighed 11 months from the start of the study and died suddenly within the next month.

At the completion of the study period 10 of the 13 patients taking T_3 and all of the 13 patients taking placebo showed some loss of weight. The average weight loss for both groups was 8 pounds or 4 per cent of the initial weight.

At follow-up, however, 1 year or more from the beginning of the study, the T_3 group showed an average net weight gain of 1 pound from the start of treatment, while the placebo group showed an average net weight loss of 4 pounds.* Thus, after 1 year 6 of 13 Cytomel subjects and 4 of 12 placebo subjects had shown a net gain in weight from the onset of treatment. It is noteworthy that the placebo patient who had lost by far the most weight at follow-up (E.J., 41 pounds) had been diagnosed as having narcolepsy and was begun on 20–30 mg. of dextroamphetamine sulfate (Dexedrine®) daily between the time of study and follow-up.

TABLE 3: Results of Treatment of Part B Group That Received Placebo

Initials	Duration of Treatment Weeks	Maximum No. Capsules	Initial Weight Lbs.	Final Weight in Study Lbs.	Weight Change in Study Lbs.	Reason for Stopping Study	Weight after 1 Year Lbs.	Weight Change after 1 Year Lbs.
M. B.	15	8	189	182	−7	US	195	+6
S. L.	4	3	176	173	−3	DNR	—	—
M. S.	9	5	212	202	−10	DNR	234	+22
R. R.	5	3	300	294	−6	DNR	280	−20
M. C.	8	2	213	207	−6	US	208	−5
E. M.	14	7	159	145	−14	DNR	153	−6
H. S.	2	2	196	192	−4	DNR	223	+27
I. G.	10	5	237	218	−19	DNR	233	−4
E. J.	15	10	299	285	−14	SLW	258	−41
E. I.	2	1	237	236	−1	US	225	−12
S. K.	8	8	222	215	−7	DNR	224	+2
M. J.	2	2	268	259	−9	DNR	264	−4
M. K.	11	8	204	198	−6	SLW	186	−18
AVERAGE	8	5	224	216	−8		224	−4
RANGE	2–15	1–10	159–300	145–294	−1 to −19		153–280	+27 to −41

US—Undesirable symptoms
DNR—Did not return
SLW—Stopped losing weight

− Indicates weight loss
+ Indicates weight gain

Side-effects

In Part A 8 patients complained of palpitation while taking T_3, and in 6 of them the medication was stopped because of this. Among these 6, 1 also complained of depression, 1 of nervousness, and 1, who had had a previous myocardial infarction, of chest discomfort, possibly angina. In no instance were there new electrocardiographic abnormalities or disturbances of rhythm detected. Two patients complained of dizziness or lightheadedness, and in 1 of them T_3 was discontinued because of this.

Among the Part B patients taking T_3 1 complained of palpitation and headache, 3 of dizziness, 2 of feeling jittery, 1 of chest pain, 1 of feeling hot, and 1 of depression. The medicine was stopped in 1 patient each because of palpitation, chest pain, feeling jittery, and depression.

Of those taking placebo, 2 patients complained of palpitation, 1 of dizziness, 1 of dryness in the mouth, and 2 of chest discomfort. In both patients with palpitation and 1 with chest discomfort the medication was stopped because of the symptoms.

Comment

It has been demonstrated that some obese patients have elevated plasma-free fatty acids which fail to show the expected rise with fasting or with the administration of epinephrine.[5, 6] The rate of oxidation of administered glucose-6-C^{14} is diminished in many obese patients, although levels of insulin tend to be high, indicating a type of insulin resistance.[6, 7] Furthermore, a blunted growth hormone response to fasting often occurs in severely overweight patients.[8] All of these abnormalities would tend to result in impairment of fat metabolism.

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* Follow-up weights were obtained in only 12 of the 13 placebo patients.

A delay in excretion of salt and water while on a low calorie diet has also been demonstrated in obese patients.[9]

Some of the above-mentioned abnormalities have been shown to improve following the administration of T_3.[5, 6, 10] A number of investigators have recently attempted to apply this finding to the treatment of obese patients, although earlier studies failed to show that thyroid medication in physiologic doses had a significant effect on weight reduction.[11, 12]

Gordon et al[3] initially reported "remarkably encouraging" results from the treatment of obese patients with T_3 and the diet used in the present study, but a subsequent report from the same institution, which included patients receiving the same diet, concluded that "although weight was lost in the hospital, this program failed to maintain an appreciable weight reduction in the majority of subjects studied once they went home."[13] The latter report did not state if any of the patients had received T_3.

Berkowitz[5] reported an average weight loss of 16.3 pounds in 42 obese patients treated from 6 to 43 weeks with T_3 in doses up to 300 mcg. per day. He thought that these patients showed a greater tolerance for T_3 than the nonobese and concluded that "T_3 may be an effective aid in the treatment of the resistant obese person." There were, however, no obese control patients treated with placebo described in this study.

Weight loss in 12 obese patients given 125–150 mcg. of T_3 for 30 days was reported by Rabinowitz and Myerson,[10] even though none of their patients became overtly hyperthyroid. This study, however, was conducted in the hospital, and the subjects were maintained on a 1,300 calorie diet.

Gwinup and Poucher[14] treated 8 patients with T_3 and 9 patients with levothyroxine (T_4) and showed that all patients who continued treatment for the 30 weeks lost weight progressively, while a placebo-treated group lost no weight. Their patients, however, were given an average of 275 mcg. of T_3 and 1,400 mcg. of T_4 and were clinically thyrotoxic during the study. These were primarily young women. Such a treatment is obviously fraught with hazard in an older person, and most patients promptly regained weight with discontinuation of the medication. No difference in weight loss was demonstrated between groups taking T_3 and T_4.

On the other hand, the primary role of diet and support by a sympathetic physician in the treatment of obesity is well recognized and has been recently stressed.[15]

The present study attempted first to utilize the suggested fat-mobilizing effects of T_3, as well as diet and regular consultation with a physician in the treatment of "resistant" overweight patients. It proved quite possible for many of the patients to lose significant amounts of weight with the help of these measures.

In the second part of the study I tried to separate the effects of T_3 from other factors involved in this weight loss. Although relatively few patients were evaluated, the results suggested that, in doses which did not produce undesirable symptoms, T_3 did not play a significant role in the loss of weight.

In obtaining follow-up weights 1 year or more after beginning treatment some implications about the supportive role of the physician might be noted. Although the patients were told at the completion of the study to continue to follow the general principles of the diet on which they had lost weight, weekly visits to the physician were stopped. When they were no longer seen frequently by the doctor most of the patients showed a tendency to regain weight. This suggests an important role of the regular advice and encouragement by the physician in the successful treatment of obesity.

Summary and Conclusions

Twenty-nine obese patients were treated with a 1,320-calorie diet and triiodothyronine (T_3, Cytomel) in increasing increments but not to the point of evident hyperthyroidism. Patients were seen weekly and examined and encouraged. All patients lost weight ranging from 2 to 41 pounds (average 19 pounds) at the completion of study, but at follow-up after 1 year the average weight loss had fallen to 8 pounds. A double-blind study was next performed with 26 patients by the same methods with the exception that 13 patients received placebo instead of T_3. The average weight loss was 8 pounds for each group of 13 patients at the end of the study. At follow-up after 1 year the T_3 group showed a net gain of 1 pound and the placebo group a net loss of 4 pounds.

The present study demonstrated that it was possible for obese patients to lose significant amounts of weight with the help of regular visits to an interested physician, a low-calorie diet, and medication. There was a tendency, once the regular visits were stopped, for these patients with few exceptions to regain the weight lost. No difference could be demonstrated between tri-

(*Continued on page 676*)

Facial Nerve Paralysis in the Newborn

CHARLES T. GERBER, M.D.,* FRANK J. BEPKO, JR., M.D.,† AARON H. GERBER, M.D., F.A.C.O.G.,‡
AND DOV COHEN, M.D.§

Reports of congenital facial nerve palsy have generally been sporadic and with few exceptions (Hepner[1]) based on a small series of cases. However, enough has been written in the aggregate to establish this symptom-complex as a definite syndrome with a predictable course. Evidence of this disorder may be noticed immediately following birth,[2] or its appearance may be somewhat delayed.[3] It may vary in severity from paresis to complete paralysis.[4] It usually involves one side,[5] but it may be bilateral as a result of agenesis of the nucleus of the facial nerve in the pons (Moebius' syndrome).[4, 6] The lesion may be situated in the supranuclear position, that is, between the cortical motor area and the pontine nucleus, or it may involve the lower motor neuron (table 1). The latter extends from the brainstem to the petrous portion of the temporal bone, where it emerges from the stylomastoid foramen and parotid gland branching to the nerve endings in the muscles of the face.[7]

TABLE 1: Classification of Congenital Paralysis of Facial Nerve Based on Localization and Etiology[5, 7, 8]

Site of Lesion[19]	Neurologic Signs	Etiology
A. Nuclear—involves nucleus of seventh nerve in pons	Bilateral—affects upper and lower distribution of muscles of face, mouth, scalp, eyelid, lagophthalmos	Agenesis of nucleus (Moebius' syndrome). Usually other congenital symptoms appear immediately. Lasts for the life of patient.
B. Supranuclear—involves face motor area in cortex or fibers which pass through cortex of facial nucleus	Affects lower distribution; no lagophthalmos	Intracranial injury
C. Peripheral—involves (1) the motor root supplying muscles of face, auricle, scalp; (2) sensory root conveying taste (chorda tympani) from anterior portion of tongue and soft palate. Consists of 3 parts[7]: (a) extends from brain to internal acoustic meatus; (b) contained in petrous portion of temporal bone; (c) emerges from stylomastoid foramen and branches to muscles of face.	Facial asymmetry unilateral; unaffected side appears distorted; affected side smooth and relaxed; mouth pulled laterally and downward or upward; lips approximated on affected side. In older children hearing may be affected. Loss of taste differentiation between bitter and sweet.[7]	Traumatic, idiopathic

The extent of involvement will, of course, vary with the location of the lesion (table 1) and may affect the muscles of the forehead, eyelids, face, naso-orbital fold, mouth, and jaws. The paralysis may be severe and easily observed, or it may be so slight as to be seen only when the patient is crying or laughing.[8] While this condition is frequently associated with birth trauma[1, 3, 4, 9] there is general agreement that in many instances it follows spontaneous delivery with no demonstrable trauma.[2, 4, 10] In fact, Hepner[1] found that there was no greater frequency of facial-nerve paralysis after forceps delivery than after spontaneous delivery. In Hepner's series[1] it was observed that there was a perfect relationship between the side of the palsy and the presentation in utero. Schaffer[4] stated, "This makes it almost certain that the disorder stems from pressure sustained while the head passes over the sacral promontory." Other explanations[11] would have to be invoked to explain the occurrence of facial paralysis in patients with unengaged heads delivered by cesarean section. Unusual lateral flexion of the head upon the shoulder with pressure upon the facial nerve is thought responsible for some cases.[3] Still other authors have been unable to demonstrate the role of intra-uterine posture in facial-nerve paralysis. A recent case of unusually marked asynclitism was delivered by cesarean section. The infant's neck in this case had a depressed groove from prolonged pressure of the mandible; however, no evidence of facial-nerve palsy was observed.

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* Chief Resident in Obstetrics and Gynecology, Georgetown University Hospital, 3800 Reservoir Road, N.W., Washington, D. C. 20007.

† Associate Professor of Obstetrics and Gynecology, Georgetown University School of Medicine; office: Georgetown University Hospital.

‡ Address: 2915 Connecticut Ave., N.W., Washington, D. C. 20008; reprint requests to Dr. A. H. Gerber.

§ Director, Department of Pediatrics, General Government Hospital, Zefat, Israel.

Inflammation of the facial nerve of viral etiology,[12] similar to that which has been incriminated in Bell's palsy of older children, has been sought as an explanation by some[13, 14, 15] but considered unlikely by others.[16,17] More recently it has been reported[14] as a concomitant of congenital cardiac lesions.

The prognosis will depend upon whether the origin of the facial paralysis is agenesis, severe intracranial trauma, or mild affection of one of the lesser lower neuron branches.[18] It may be a permanent parlysis or an evanescent paresis lasting from a few days to several months.[2, 5, 10] Statistics for complete recovery vary from 20 to 50 per cent and higher.[8, 14] Schaffer[4] stated that all can be expected to disappear in time except the nuclear agenesis variety which remains for life. Most authors speak encouragingly of the prognosis indicating the likelihood of complete recovery in the vast majority of cases. The prognosis also depends on whether the nerve fibers were torn or whether the nerve was injured by external pressure from edema or hemorrhage, when improvement can be expected in a few weeks.

The occurrence of this lesion is considered rare by some.[1, 4] Others[5] think that it is by far more frequent than reports indicate. Hepner[1] claims that this lesion occurs as often as in 6 per cent of deliveries. Our own experience would suggest a much lower frequency. However, it is possible that insufficient attention has been focused upon slight paresis which may escape detection.

A common error in diagnosis is the assumption that the palsy is on the side where the angle of the mouth is drawn down and laterally. Actually, the paralysis is on the opposite, flattened, immobile side.

The need for treatment varies with the extent of the lesion. During the immediate neonatal period, treatment with faradic current has been suggested.[13] Some have questioned the value of such therapy. As the child develops, the effects of the lesion upon speech and appearance have been observed. Definitive therapy by neuroplasty, anastomosing the facial to the spinal accessory nerve and/or employing the hypoglossal, the abducens or phrenic nerves, have been reported with variable success.[13] Temporary paralysis of the unaffected area induced with local anesthesia has been reported as a test for the success which may be expected by treatment with neurectomy of the unaffected side in a given case.[8]

Report of Cases

Case 1. A 24-year-old gravida II, Para 1, borderline toxemic patient (B.P. 140/80, 1+ edema, 2+ albumin), previously delivered by cesarean section because of primary inertia, was admitted in labor at term. Fetal heart sounds were normal. The fetus was in L.O.A. presentation. Within 4 hours following admission an apparently well infant was delivered by low cervical cesarean section under general anesthesia. Meconium was noted on opening the amniotic sac. No difficulty was experienced with extraction of the fetus and no instruments were applied. Respirations began spontaneously immediately following birth and no unusual resuscitative measures were required. Examination of the infant immediately after birth revealed a male infant weighing 3,230 Gm. with a paralysis affecting the lower distribution of the left facial nerve. This was largely evident on crying, at which time the right side and angle of the mouth drooped (figure 1). There was no evidence of involvement of other cranial nerves or of abnormal intracranial pressure. The infant nursed satisfactorily and was discharged on the tenth day

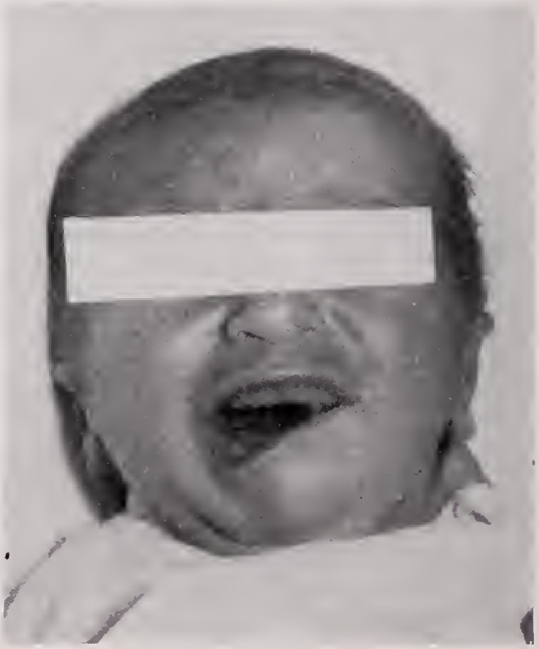

FIG. 1. Case 1. Left facial palsy in 1-day-old infant.

weighing 3,100 Gm. and in satisfactory condition except for the facial paralysis which remained unimproved. Follow-up examination at 2½ months following birth revealed no improvement.

Case 2. A newborn female infant exhibited a paralysis of the left facial nerve immediately following birth. This was the third delivery to a mother 35 years of age. The previous births, as well as the present, were spontaneous. Delivery occurred after 5 hours of labor from an O.D.A. position. The infant weighed 3,150 Gm. and breathed spontaneously. The face was asymmetric. The left side appeared normal, but the right side drooped at the angle of the mouth. The nasolabial fold was present, there was no lagophthalmos, and no sign of other cranial nerve involvement. The infant progressed satisfactorily, regained her birth weight, and was discharged in satisfactory condition 7 days after birth. The paralysis improved progressively but remained in a slight form for 6 months. Follow-up examination after 3 years disclosed a slight but definite residue of the palsy.

Case 3. A gravida II, Para 1, was seen prenatally with the fetus presenting transversely. She was treated by external version and was subsequently delivered by breech extraction after 13 hours of labor. Forceps were not employed. The infant, a female, weighed 3,450 Gm. and exhibited a paresis of the left side of the face. The remainder of the physical examination appeared negative and the infant was discharged in satisfactory condition on the ninth day. General development since birth has been below average. There was a general weakness of the legs, and she used her arms to help herself to stand up. She began to walk with support at 13 months. She was considered to have amyotonia congenita. The last follow-up at the age of 4½ years indicated that the child was slow in manner and performance. The memory was below average. The palsy remained unimproved.

Case 4. A newborn baby girl manifested left facial palsy immediately following spontaneous delivery. The mother was 22, gravida I, Para 0. The prenatal course had been entirely uneventful. After 5 hours of labor, spontaneous delivery ensued from an L.O.A. position over an LML episiotomy. The baby required no resuscitation. It weighed 3,050 Gm. By the time of discharge, on the fourth day after birth, the facial paralysis was much improved. Follow-up at the age of 14 disclosed a residual paresis. At 18 the paresis was almost completely gone and was apparent only on marked emotional facial movements.

Case 5. A newborn female infant manifested left lower facial nerve palsy at birth (figure 2). The mother was a gravida II, Para 1, who received antibiotics prenatally for lues. She was Rh negative, but Coombs' and antibody studies were negative. Labor commenced spontaneously at 37 weeks' gestation. Progress was uneventful and terminated after 8 hours and 40 minutes in a natural delivery. The infant weighed 3,000 Gm. Respirations were spontaneous. Apgar score: 7 at 1 minute.

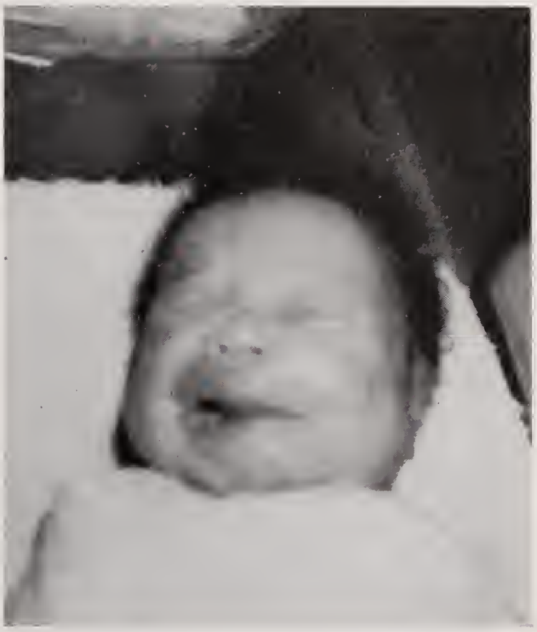

FIG. 2. Case 5. Left facial palsy in newborn infant.

Discussion

Facial paralysis in the newborn is not necessarily due to trauma (table 1). Trauma due to instrumentation did not appear to play a part in 4 of our 5 cases. One patient (case 3) was delivered by breech extraction.

The situation of the fetus in utero did not seem to be a factor in any of these cases; 1 was a transverse lie, 1 in an unengaged vertex delivered by section, 2 in L.O.A., and another in O.D.A. presentation.

There were no associated complications such as prolonged labor, marked asynclitism, or any history suggestive of antepartum viral infection.

All of the infants were at or near term and weighed at least 3,000 Gm.

In all cases the facial palsy was noted immediately after delivery and was unilateral.

Follow-up examination revealed the paralysis was still present at 2½ months in case 1. There was a residual paresis in case 2 at the time when a follow-up check was made at 3 years. Patient no. 3 when seen for purposes of this study at 4½ years of age was unimproved. There also was an associated amyotonia congenita in this child. Patient no. 4 revealed a residual paresis at the age of 14. At 18 there was almost complete recovery except for a slight paresis noticeable on laughing. These observations are somewhat at variance with those of others as to the prognosis for rapid and complete disappearance of paralysis.

The site of involvement in most cases reported was the peripheral portion of the facial nerve. The buccal and mandibular branches are those which are chiefly affected.

Even though 4 of our 5 patients were females, no conclusion can be drawn because of the small number of cases. No significant sex incidence has been reported by others.

TABLE 2: Summary of Case Presentations

	Case 1	Case 2	Case 3	Case 4	Case 5
Mother's age	24	35	25	18	22
Parity	Gravida II, Para 1	Gravida II, Para 2	Gravida II, Para 1	Gravida I, Para 0	Gravida I, Para 0
Prenatal and intrapartum complications	Toxemia; meconium	—	Transverse lie; external version	—	Treated lues; serology negative
Period of gestation	Term	Term	Term	Term	37 wks.
Type of delivery	Cesarean section, no forceps	Spontaneous	Breech extraction, no forceps	Spontaneous	Spontaneous
Position	L.O.A.	O.D.A.	S.L.A.	L.O.A.	L.O.A.
Location of lesion	Left facial, lower distribution	Left facial, lower distribution	Left facial, lower distribution	Left facial, lower distribution	Left facial, lower distribution
Weight (Gm.)	3,230	3,150	3,450	3,050	3,000
Sex	M	F	F	F	F
Associated abnormalities	—	—	Myotonia congenita	—	—
Follow-up	At 2 mos. improved	At 3 yrs. almost complete recovery; residua present	At 4½ yrs. unimproved	At 18 yrs. almost complete recovery; residua present	At 2 wks. unimproved

The left facial nerve was that chiefly affected. Although this series is too small to justify conclusion, it should be noted that Hepner[1] as well as Schaffer[4] are firmly of the opinion that there is a relationship between the fetal position and the side on which the lesion is found.

Summary

Five previously unreported cases of congenital paralysis of the facial nerve have been presented (table 2) and the literature reviewed.

Traumatic delivery was an associated factor in only 1 of the 5 reported cases. This confirms published observations of congenital facial nerve paralysis as being frequently unrelated to obstetrical trauma.

The cause of congenital facial nerve paralysis unassociated with trauma or agenesis is unknown. No etiologic maternal factors relating to viral infection, toxemic parity, or age were noted. Fetal presentation, situation in the uterus, maturity, birth weight, and method of delivery (except when traumatic) could not be related to the development of congenital facial nerve paralysis.

Minimal degrees of this affliction probably remain undiagnosed.

Treatment is unsatisfactory. Most cases recover spontaneously. However, the recovery period is longer than generally stated, and a minor residue persists more frequently than is usually anticipated.

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Arteriographic Localization of Massive Gastrointestinal Hemorrhage

WHEI-RUNG FU, M.D.,* AND CHARLES J. TEGTMEYER, M.D.†

ACUTE GASTROINTESTINAL HEMORRHAGE is a difficult diagnostic problem. Barium contrast studies and endoscopy do not always delineate the source of bleeding. Arteriography may successfully identify the precise site of bleeding in selected cases.[1, 2] The following is a case of massive gastrointestinal hemorrhage the origin of which was demonstrated by arteriography.

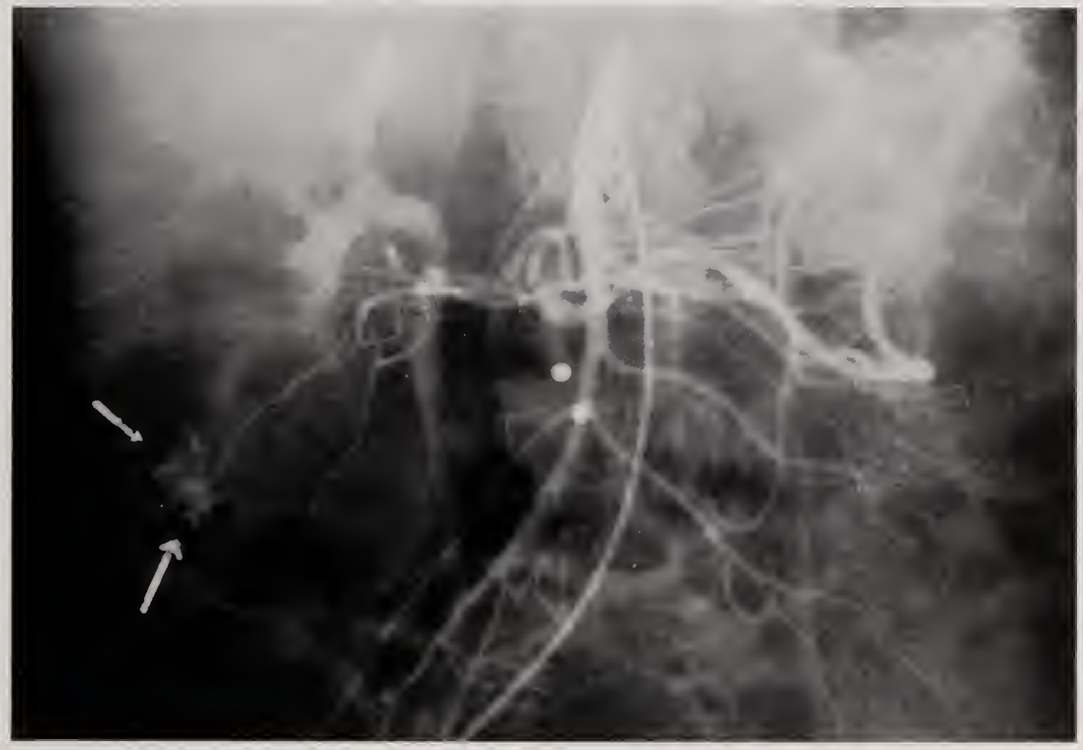

FIG. 1. Arterial phase of selective superior mesenteric arteriogram demonstrating site of bleeding from ascending colon (arrows).

Report of Case

M. L., a 48-year-old diabetic woman with known diverticulosis, was admitted after 1 day of lower gastrointestinal bleeding. She appeared pale and anxious. The blood pressure was 90/70, and the pulse rate was 120 per minute. The abdomen was soft, without tenderness or rebound. The hematocrit was 26 per cent. The patient received 7 units of blood within 10 hours but the hematocrit remained 26. Proctoscopy did not indicate the origin of the bleeding.

A selective superior mesenteric arteriogram demonstrated the source of bleeding as a branch of the right colic artery (figures 1 and 2). The vessel supplied the ascending colon 1 cm. above the level of the iliac crest. The patient was taken to surgery. The arteriographic diagnosis was confirmed and a right hemicolectomy was performed. The patient had an uneventful recovery. The pathology report showed multiple diverticula with acute and chronic inflammation.

Comment

The gastrointestinal tract filled with blood is a formidable surgical problem. Unless the source has

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* Assistant Professor of Radiology, George Washington University Medical Center, 901 Twenty-third Street, N. W., Washington, D. C. 20037.

† Resident in Radiology, George Washington University Hospital.

been identified by preoperative studies, surgical exploration is frequently unsuccessful in locating the precise site of hemorrhage. This is particularly difficult in the colon because the blood diffuses throughout the large bowel irrespective of the source.

Selective arteriography has become a simple and safe procedure with the improvement of the contrast media and the development of Seldinger's percutaneous technique.[3] The complications of arteriography are infrequent in the hands of a well-trained angiographer. The study is performed under local anesthesia. The procedure is usually completed within 1 hour. This generally will not delay emergency therapy and may identify the precise site of hemorrhage. A well-planned surgical approach can then be utilized with the saving of valuable time and unnecessary exploration at surgery.

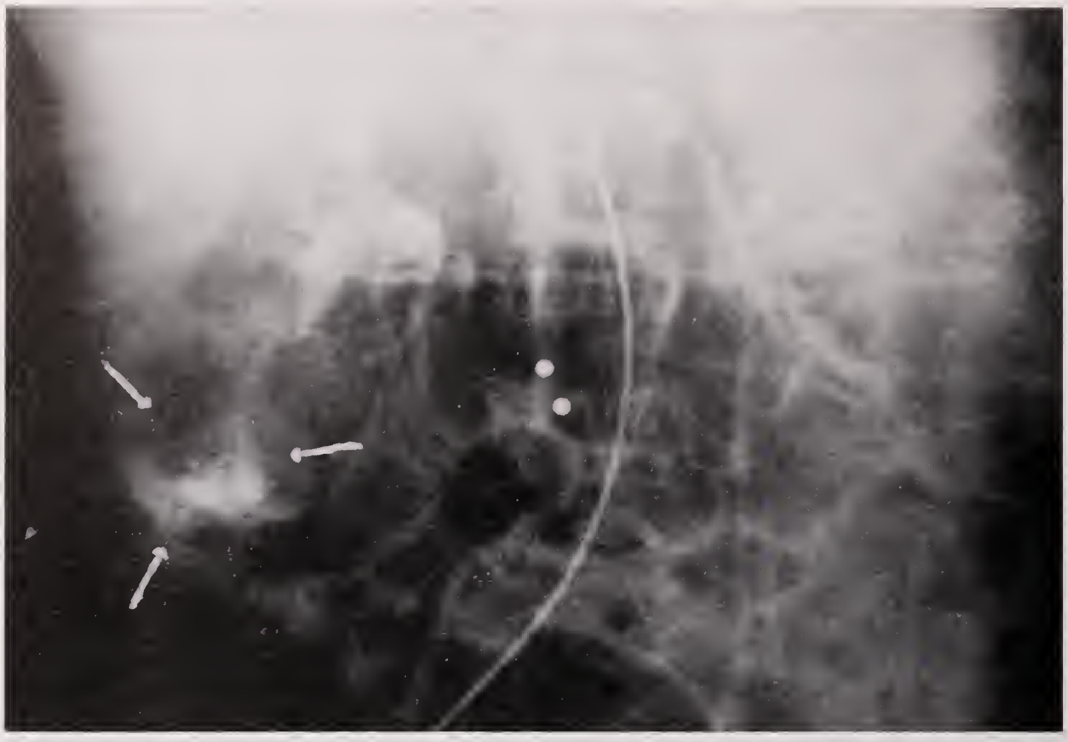

FIG. 2. Venous phase of selective superior mesenteric arteriogram demonstrating site of bleeding (arrows).

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Therapy of Ovarian Carcinoma

STANLEY A. SCHWARTZ, M.D., F.A.C.P.[*]

OVARIAN CANCER is now the fourth leading cause of death from malignancy in women after carcinoma of the breast, large bowel, and cervix uteri.

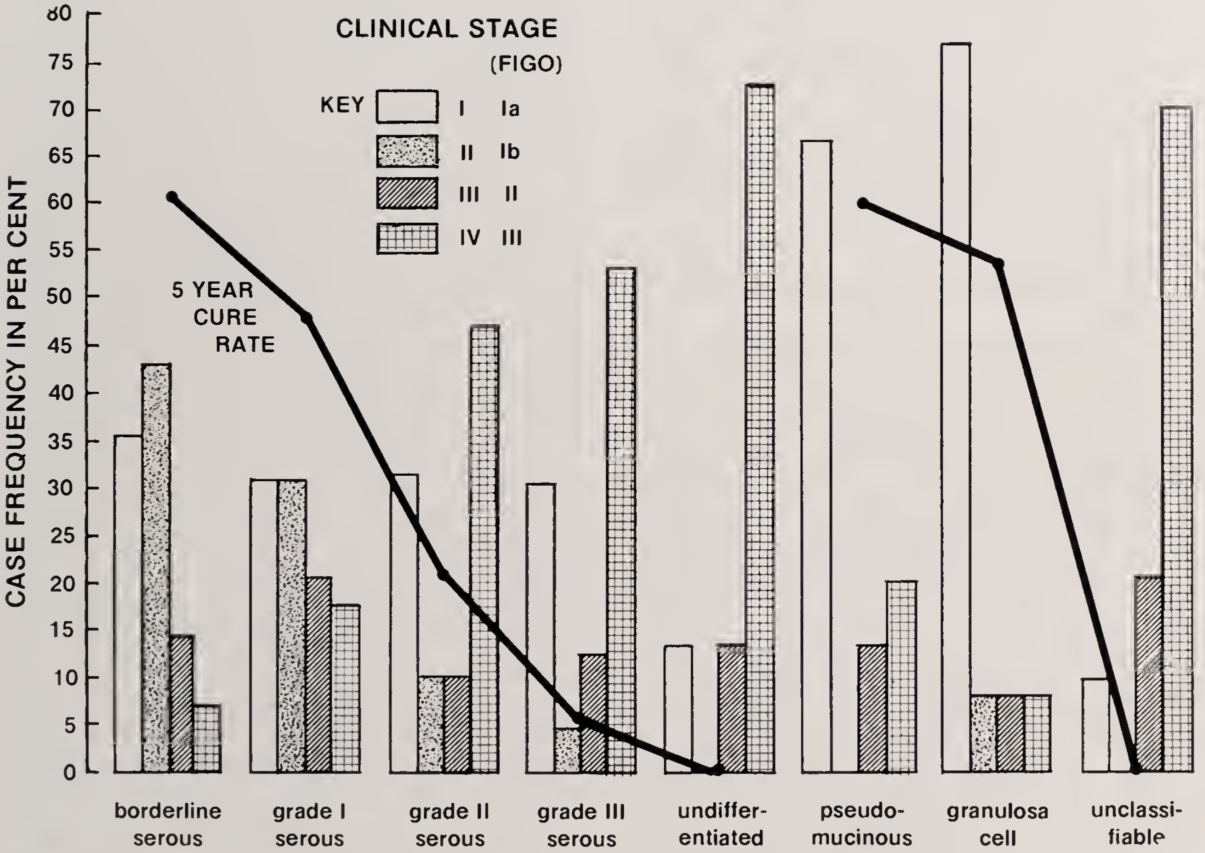

FIG. 1. The interrelationship of histologic type, histologic degree of malignancy, clinical extent of disease, and cure rate in cancer of the ovary.[†]

Five-year survival in this tumor is gradually increasing. As an example, in the years 1922 to 1943 survival in all stages of disease and types of tumors was 27.5 per cent, but in the years 1952 to 1961 5-year survival had increased to 42 per cent in a comparable group.[1]

Prognosis is favorably altered by histologic type and clinical staging of disease, and survival data should always be evaluated in this light.[1] There are 4 classifications in the clinical staging of ovarian cancer:

Stage I: Cancer limited to 1 ovary.

Stage II: Cancer limited to both ovaries. Rupture of cyst or adherence to surrounding tissues.

Stage III: Cancer extended to involve other pelvic viscera or peritoneum.

Stage IV: Cancer extended beyond the confines of the pelvis.

Histologic types are:

A. Well differentiated cystadenocarcinoma, serous and/or mucinous.
B. Poorly differentiated cystadenocarcinoma, serous and/or mucinous.
C. Solid adenocarcinoma.

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[*] Attending in Medicine, Doctors Hospital, Washington; Clinical Instructor in Medicine, George Washington University School of Medicine; office: 2400 H Street, N. W., Washington, D. C. 20037.

[†] Figures 1, 2 and 3 are reproduced by permission from Dr. Robert T. L. Long.[2]

D. Endometrial types of adenocarcinoma.
E. Special tumors—granulosa-cell carcinoma, dysgerminoma, arrhenoblastoma.

Figure 1 demonstrates that survival depends on both histologic type and stage and that certain histologic types predominate in certain stages. For example, with Grade I serous adenocarcinoma one finds a majority of these tumors in Stage I and Stage II. On the other hand, most undifferentiated carcinomas fall into Stage IV when discovered.

The therapy of ovarian carcinoma is divided into surgery, radiation, and chemotherapy. One, 2, or all 3 of these modalities have been used initially. In Stage I carcinoma of the ovary, surgery is the primary and only therapy.

As shown in figure 2, a 75 to 80 per cent 5-year survival may be achieved. Surgical resection of both ovaries with combined hysterectomy, salpingectomy, and omentectomy should be used.

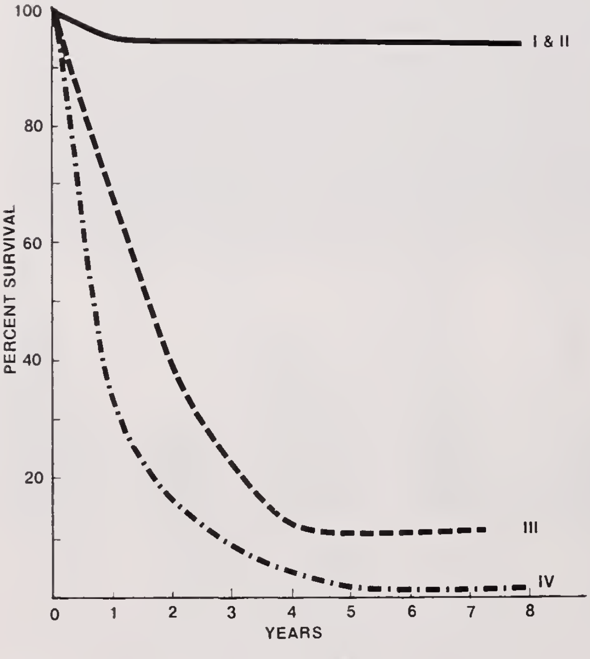

Fig. 2. Accumulative survival for determinate cases according to stage. Only 1 patient of 22 included in Stages I and II has died of disease. Only 1 patient in Stage IV was a long-term survivor. Stage III is the group of interest, because it is the group in which survival may possibly be improved.

The removal of the omentum may be critical since, even if it is normal, it is a common site of metastases and its removal may be a deterrent to the formation of ascites. The uterus is removed because of the frequency of involvement of the uterus by transtubal spread. Both ovaries should be removed even if 1 appears normal. There is an incidence of bilaterality of these tumors, and figures as high as 43 per cent have been given. The use of radiation therapy in addition to surgery in Stage II carcinoma is debatable. There are advocates on both sides. However, no conclusive evidence of the advantage of radiation has been shown.

Stage III carcinoma of the ovary has been actively attacked in recent years because of preliminary data which seem to show the combined approach of radiation with surgery, and the addition of chemotherapy has increased survival.

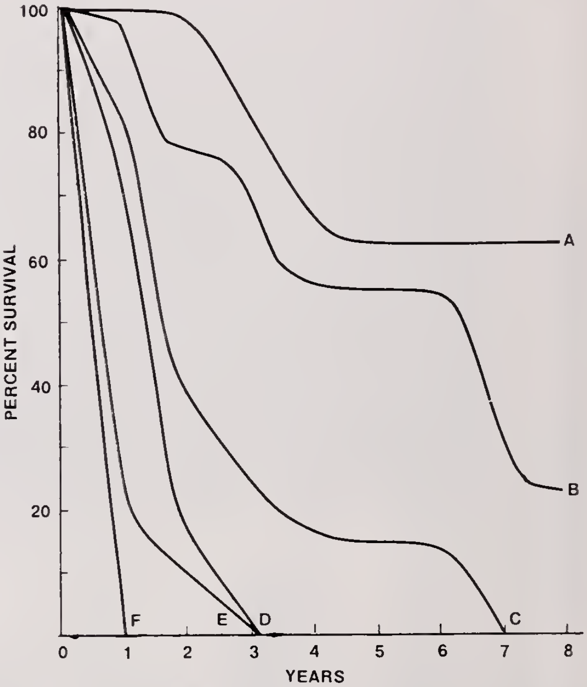

FIG. 3. Survival by method of treatment of patients having Stage III disease. Survival in the group with locally advanced tumors varied markedly with the type of treatment. (A) Radical surgery with radiotherapy (12 patients); (B) radical surgery without radiotherapy (4 patients); (C) oöphorectomy with radiotherapy (10 patients); (D) oöphorectomy alone (8 patients); (E) no treatment (10 patients); and (F) radiotherapy alone (3 patients). The very favorable survival obtained by combining radiation and radical surgery and the relatively poor survival with other methods point this out as the ideal management for locally advanced tumors.

Figure 3 shows a study which demonstrates the very favorable survival obtained by combining radiation with radical surgery and the relatively poor survival with other modalities.[2]

Types of treatment:

A. Radical surgery with radiotherapy
B. Radical surgery without radiotherapy
C. Oöphorectomy with radiotherapy

D. Oöphorectomy alone
E. No treatment
F. Radiotherapy alone.

The combination of radiotherapy, radical surgery and chemotherapy has recently been advocated.[3] Drugs such as Cytoxan®, chlorambucil, and phenylalanine mustard have been used immediately after surgery and radiation. As an example, Cytoxan was used in a dose of 200 mg. I.V. for 4 days after the above 2 modalities.[4] Median remission without chemotherapy was 7 months; with chemotherapy medial survival advanced to 13 months.

I have used a modified regimen as the above, as well as chlorambucil in a dose of 0.2 mg./Kg. 5 days after surgery and continued this for 4 weeks. On day 10, radiation therapy is initiated. Counts are obtained once weekly. If the white blood count falls below 3,000 all therapy is stopped.

The most common use of chemotherapy has been in the advanced ovarian tumors where one can no longer use radiation or surgery.[4, 5] The alkylating agents chlorambucil, Cytoxan, Thiotepa® and Alkeran® are the most commonly used. Alkeran may be given intravenously or orally in high doses. Cytoxan is used in similar fashion. Chlorambucil is given only orally.

There is a 50 per cent objective remission with any of the alkylating agents. Each in a selected group of patients has given a prolonged remission, some lasting 3 to 4 years. These, however, are small in number. There is a question as to whether the remission given by chemotherapeutic agents will prolong survival. This is being evaluated by several study groups.

The therapy of malignant effusions secondary to ovarian tumors is similar to effusions caused by other tumors. The alkylating agents Thiotepa and nitrogen mustard are particularly effective here.

Conclusion

Ovarian carcinoma lends itself well to various modalities of therapy. All disciplines—surgery, radiation and chemotherapy—are important in management. Preliminary data have demonstrated that all 3 together in advanced disease may give the best results.

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Neoplasms of the Testis—Sabatini

(Continued from page 655)

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Early Detection of Disease in Young Men

N. THOMAS CONNALLY, M.D.*

OFTEN THE CASES presented at the medical ground rounds of our major teaching institutions are unusual or even rare diseases, or they are cases which illustrate new, sometimes astounding approaches to diagnosis and treatment of more common but extremely severe disease states, such as chronic renal failure. In a departure from this, the following case was presented at the final grand rounds which I helped arrange as Resident in Medicine at the University of Virginia Hospital and in house staff conferences at Doctors Hospital.

This 33-year-old securities salesman was seen as an outpatient for his routine annual physical examination. He stated that he was feeling quite well and, except for a weight gain of about 5 pounds in the previous year, he had no specific complaints.

He had been an active athlete in high school and had played freshman football in college but had not participated in vigorous athletics since then. He played 18 holes of golf about every other weekend during the spring and summer, but all other interest in sports was as a spectator. His office is about 2 miles from his home but he drives to work and walks 50 yards from the parking lot. Almost all of his business is conducted "over the phone."

He has smoked 1½ packages of cigarettes per day for about 14 years but has only an occasional morning cough. He gets very mild exertional dyspnea on climbing a particular hill on the golf course. Usually he will have a highball or beer before dinner, but except when he is on vacation he never drinks during the day. He has never restricted his diet, other than trying to "cut down on calories" for brief periods several years ago. He weighs about 30 pounds more than he did when he stopped playing football at the age of 20. His main dinner course is usually beef, pork, or a casserole, but he will have seafood perhaps once every 2 weeks. His breakfast usually includes 2 eggs with bacon or sausage and a glass of whole milk—as a good example for his children.

His father died at the age of 58 of a myocardial infarction. His mother, now 61, is in reasonably good health. One of his mother's brothers died of carcinoma of the lung.

The blood pressure was 140/95, the pulse rate 80, and the respiratory rate 16. His height was 71 inches and his weight 209 pounds. He was well developed but mildly obese. Examinations of the optic fundi, neck, and chest were normal. The heart sounds were of good quality, but it was difficult to evaluate cardiac size clinically. The abdominal examination was normal. Proctosigmoidoscopy to 15 cm. was normal. The extremities and joints and the neuromuscular system were normal.

The urinalysis was normal. The hematocrit was 45 per cent, and the white blood count was 5,600 per ml. with a normal differential. The blood sugar fasting was 96 mg. per 100 ml. and 2 hours after glucose ingestion was 92 mg. per 100 ml. Serum cholesterol was 266 mg. per 100 ml. and serum triglycerides were 192 mg. per 100 ml. Serum lipoprotein electrophoresis was read as normal, and the fasting plasma was not turbid. Uric acid, blood urea, alkaline phosphatase, SGOT, and SGPT were normal. An electrocardiogram showed no evidence of cardiac disease, and the chest X-ray film was normal. Screening bronchospirogram showed his maximum mid-expiratory flow rate to be 2.8 liters per second, somewhat less than that predicted.

The patient was not presented; indeed, he did not exist. But give or take a few pounds, a few mg. per cent of serum cholesterol, or a few cigarettes per day, patients like him are seen by most general internists in the United States almost daily. In reviewing his history, physical examination, and laboratory data, it is difficult to put a specific diagnostic label on him. The absence of cough on half the days, by our present definition, does not qualify him for chronic bronchitis. The serum cholesterol and triglycerides certainly do not fit the pattern of a familial lipoprotein disorder. His blood pressure is borderline, but one would want to get a few more readings before calling him hypertensive.

I feel that this man is not healthy and that he represents our number 1 health problem in this country—a young man who has not learned to take care of himself and who probably has 2 or more preclinical diseases. The magnitude of the problem is evident from national health statistics.

Between 1900 and 1954 the average remaining lifetime from birth (life expectancy) in the United States increased from 46 to 66 years. But in the decade from 1954 to 1964 the life expectancy for men did not change and that for women rose less than 1 year. In the statistic which reflects death rate in middle age and discounts infant mortality—the average remaining years for men from age 10—the United States now ranks thirty-second in the world. This puts us behind such countries as Portugal and Yugoslavia.[1] In the 1954–1964 decade, in which our health statistics improved very little, National Institutes of Health appropriations rose 20-fold, from 50 million to over 1 billion dollars per year. Our total annual national health expenditure is now between 45 and 50 billion dollars. American medical education and research lead the world. However, with such achievements as hemodialysis for chronic renal failure and cardiac transplants, we seem to be focusing more and more of our health effort on the end stage of disease to the neglect of emphasizing preventive medicine in the early asymptomatic stages of the degenerative diseases. Although there has been relatively less emphasis on research in the field of early detection and prevention of degenerative disease, much information is available. The major problem seems to be a marked neglect of this aspect of medical education on the undergraduate, house staff, and postgraduate level.

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* Attending in Internal Medicine, Doctors Hospital, Washington; Clinical Instructor in Medicine, George Washington University School of Medicine; office: 1835 Eye Street, N. W., Washington, D. C. 20006.

I should like to use the above case as an example of what the practicing physician can accomplish and also to point out the major knowledge gaps in examining and advising such an individual. One of the first problems is: How often should he see a physician for a periodic health examination, such as that described above? At the present time we do not know the answer. There is very little information in the medical literature concerning the effects of periodic physical examinations on mortality. In a recent article Roberts and his associates[2] presented data on over 20,000 men who had periodic health examinations. In comparing the mortality of this group with that of a comparable control group, the data suggested a favorable influence of periodic examinations on mortality experience, but they did not allow conclusions and offered little to suggest which studies should be done in a periodic health evaluation. The authors concluded that their data encouraged well-controlled prospective studies. Since automation is enabling us to do more tests on more "well" patients at less expense we should be able to gather some information in this area in a few years, but presently we are very much in the dark.

Taking another approach—that of understanding the natural history and pathogenesis of certain major diseases—a few reasonable assumptions can be made from the few facts we have. There are diseases which we can detect early and reverse. If this is true then the statistics we compile in our prospective studies of the value of physical examinations must not only take into account what studies were done but what the physician and the patient did about these tests, or whether the patient changed his habits as a result of the consultation.

One of the diseases in which preventive advice is most important is arteriosclerotic coronary heart disease. Cardiovascular disease in general accounts for 55 per cent of deaths in the United States, and 30 per cent of all deaths are due to a single cause, arteriosclerotic heart disease, i.e., coronary artery heart disease. Moreover, of the approximately 700,000 deaths per year in people under 65 years of age, about 250,000, or 35 per cent, are due to cardiovascular disease, and 150,000, or about 22 per cent, are due to coronary atherosclerosis. Thirty per cent of all coronary deaths occur in those under 65 years of age. From these incidence and mortality figures one can estimate that the average adult American male has about 1 chance in 5 of having a clinical coronary heart disease event before the age of 60, and of these approximately ½ will be dead within 5 years.[3]

Most students of preventive cardiology believe that if we are to improve our national health statistics we must concentrate on primary prevention, i.e., advising and treating the young man before he has his first "coronary." Using the classical epidemiological approach, one would focus his main preventive efforts on those who are at greatest risk. There are a great deal of data in this area, and in general the larger studies are in agreement on the major coronary risk factors. The most famous, and perhaps the best study of this type, is that sponsored by the National Heart Institute in Framingham, Massachusetts, beginning in 1949. There are many other similar studies which substantiate in general the Framingham findings.

To the research cardiologist or serum lipid expert the Framingham data are sound but ancient knowledge. However, I have been astounded by how little knowledge otherwise well-trained house officers or practicing physicians have about the Framingham study or similar studies. These studies continue to be the cornerstone of our knowledge of the coronary risk factors. In brief, the Framingham study, starting in 1949, examined about 5,000 patients and followed them for the development of a coronary heart disease event, i.e., either documented angina pectoris or a myocardial infarction.[4] At the end of the first 8 years it became clear after statistical analysis that certain groups of men were more likely to have coronary heart disease. The important or major risk factors were increasing levels of serum lipids, increasing levels of blood pressure, cigarette smoking, and obesity. A man who has 1 or more of the major risk factors stands a 2- to 10-fold greater chance of developing coronary heart disease than the man who has none of these risk factors. The patient presented has 2 and possibly 3 of the major risk factors—elevated cholesterol, moderately heavy cigarette smoking, and borderline elevated blood pressure. He is also obese. However, if obesity is dissociated from high cholesterol levels, elevated blood pressure or diabetes (another less common risk factor), unless it becomes excessive it carries no increased risk. If he could have managed to gain 30 pounds without raising his cholesterol or his blood pressure he probably would not have harmed himself.

Let us look at each risk factor which he does exhibit and see what the physician can do about these. For the purpose of assessing relative ability of lipids as a predictor of coronary events, cholesterol, phospholipid, lipoprotein and Gofman's atherogenic index were measured, and in the first Framingham analysis it was thought that cholesterol was the best predictor. A knowledge explosion has occurred in the serum lipid field since then. Subsequent epidemiologic studies of the Framingham type have suggested that serum triglycerides may be a better predictor of coronary risk than cholesterol. In his excellent book, "Lectures on Preventive Cardiology," Stamler[5] agrees that this may be the case for certain extreme elevations, but for the majority of the population in the "garden-variety" of hyperlipidemia they are of equal predictive value, and in many cases cholesterol is better. Future epidemiologic studies should certainly include triglyceride determinations, but at this point in time for the practicing physician serum cholesterol elevation is a major risk factor.

Why then should we include triglyceride and/or lipoprotein determinations in our periodic health evaluations? The work of Frederickson and his colleagues on familial types of hyperlipidemias has shown that there are extreme cases in which cholesterol is clearly not as important as other lipids. Very briefly, he has described 5 different types of extreme lipid elevations, often associated with premature atherosclerosis. In type I the circulating chylomicra remain elevated too long after lipids have been ingested. In type II (what used to be called familial hypercholesterolemia) the beta-lipoproteins are markedly elevated, so the cholesterol levels are extremely high. In type IV one sees the elevation mainly in the pre-beta-lipoprotein fraction and the triglycerides show the greatest elevation. Types III and V are combinations of the other types. Since the treatments of these major severe lipid elevations differ, it is important to rule them out. This is especially true for type IV (severe hypertriglyceridemia) which is carbohydrate-induced and which would not be improved if unrecognized and the patient were placed on a low-fat, relatively liberal carbohydrate diet. In addition, obviously, if cholesterol alone is severely elevated, some of the secondary hyperlipidemias, such as myxedema or the nephrotic syndrome, must be ruled out.

However, these familial hyperlipidemias and even the secondary hyperlipidemias are not seen every day in a general practice of internal medicine. Identifying and treating this small group of patients will not substantially affect our national mortality statistics. In order to effect substantial improvement in our coronary statistics we must focus on those patients whom Stamler[6] has called the "garden-variety" of diet-induced hypercholesterolemia-hyperlipidemia. The patient presented is an example of this type of individual. There is a modest cholesterol elevation and often a slight parallel triglyceride elevation. The lipoproteins electrophoretic strip will probably be read as normal.

At what cholesterol level do we advise the patient to change his habits? Many physicians have had their thinking of what really constitutes hypercholesterolemia colored by the search for the extreme elevations, found in patients with Frederickson's type II hyperlipidemia or those with myxedema. Often we do not worry about a cholesterol of 266 mg. Some of our laboratories, when they publish their normal values, rely on 2 standard deviations from the mean and may call a value between 250 and 300 mg. the upper limit of normal. The fallacy is that they are using a population with a high incidence of disease for their averages. We know that people whose serum cholesterol value is greater than 250 mg. have 3 to 4 times more coronary events than those whose cholesterol is below 200 mg. Stamler[7] thinks that a cholesterol value above 250 mg. should be considered significantly elevated and one between 200 and 250 mg. borderline. Eventually the average figure of 170 mg., seen in countries where coronary heart disease is very rare, may become our goal.

After one has established that the patient falls into this group, what can be done for him? Can we lower his serum cholesterol? If so, will this reduce his chances of having a "coronary"? The answer to the first is unequivocally clear. It is clear from metabolic studies on humans, from animal experimentation, and from excellent epidemiologic data on free-living populations. This type of hypercholesterolemia can be improved by reducing the amounts of saturated fat and cholesterol in the diet. The New York Anti-Coronary Club study, for example, has shown that average cholesterol levels can be lowered 13 per cent.[8] The second question is harder to answer. By lowering the cholesterol can we reduce the incidence of coronary disease? Atheromata produced in animals by high-saturated fat, high-cholesterol diets have been shown to resolve following discontinuation of these diets. The data from studies such as that of the New York Anti-Coronary Club show that this is true for man. The decrease in coronary events in those subjects who lowered their cholesterol was what one would expect (from Framingham and similar data) if they had initially been in the lower-risk group. However, these studies are on relatively small populations, and some critics think not statistically significant. Currently, the National Heart Institute has completed a feasibility study showing that meaningful diet changes can be made in large free-living groups, and they are contemplating a much larger study involving about 100,000 people which would take several years. This should unequivocally answer this most important question.

While we are awaiting this information, the circumstantial evidence that lowering cholesterol will be beneficial in terms of longevity is so overwhelming that I believe we are obliged to advise our patients to change their diet. In most cases this does not involve significant hardship. Merely omitting the breakfast eggs and switching to skim milk would be an important beginning in the patient presented. I have been amazed by how many of my own patients, often extremely well-educated people, are taking from 50 to 60 per cent of their total calories in the form of fats. Many have never been told that a chicken sandwich may be better than a hamburger and a milkshake.

Our patient's 1½ packages of cigarettes per day also puts him in the high-risk group for myocardial infarction. He may not know this, but almost certainly he is aware of the increased risk of lung carcinoma and may be aware of the increased risk of chronic bronchitis and emphysema. Yet he still smokes. What can one do to get him to stop? There is good information that at this consultation his physician has by far the best opportunity to effect this change. Studies have shown that public information about smoking has little effect on original smoking trends. Of those who have stopped, most have done so on the advice of someone perceived as an expert in the relevant issues and someone who could relate smoking to a specific problem in the patient.[9, 10]

In this case, although our patient does not meet the present arbitrary definition of chronic bronchitis (he does not have a productive cough on half the days), his diminished maximal mid-expiratory flow rate certainly suggests that he has bronchial alteration. This fact should be of overwhelming persuasive value.

The third major risk factor of coronary disease is hypertension. Our patient's diastolic pressure of 95 mm. Hg, if it can be verified on successive readings, increases his risk of coronary disease and his risk of having much higher blood pressure in later years. This reading is one of the simplest and most important made on the routine physical examination. In a community survey all subjects found to be hypertensive had no prior knowledge of their disease.[11] In this particular case what can be done about the hypertension? The patient could be put through extensive diagnostic tests to rule out "curable" causes of hypertension, or he could be immediately placed on a mild blood-pressure-lowering agent. The more sensible approach would be to have him lose weight. There are excellent studies to show that weight and increased blood pressure are correlated. This is more than an artifact due to increased arm girth.[12] If our patient could lose about 20 of the 30 pounds he has gained since college he almost certainly will bring his diastolic pressure below 90 mm. Hg, thus eliminating this coronary risk factor. Obviously he should be followed through the years for a significant elevation and have appropriate diagnosis and treatment if this occurs.

If, in the discussion of his periodic health examination with the physician, our patient can be convinced to do 3 simple things, to reduce the amount of saturated fat in his diet, to stop smoking, and to lose weight, his chances of surviving middle age will be greatly enhanced. The most important variable in the routine physical evaluation is the persuasive skill of the physician rather than the number of expensive tests performed. We do not know what a lot of tests do for his longevity. On the other hand, it seems quite clear that good advice and a few well chosen tests can do a great deal for his longevity. These 3 changes in his habits involve no expensive tests and no drugs. Ultimately, after public acceptance, this type of advice may be given by medical aides under the direction of a physician. Until this occurs it seems clear that careful attention to advising the patient after his periodic physical examination represents the most productive use of a physician's time.

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Triiodothyronine and Placebo for Obesity—Goodman

(*Continued from page 662*)

iodothyronine in near physiologic dosage and placebo as an adjunct to weight reduction. It seems likely that continued regular support and encouragement by the physician play an important role in the successful treatment of obesity.

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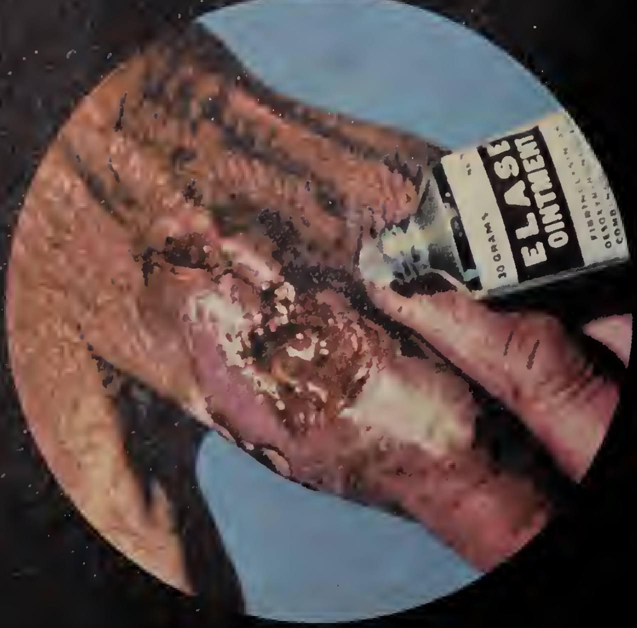
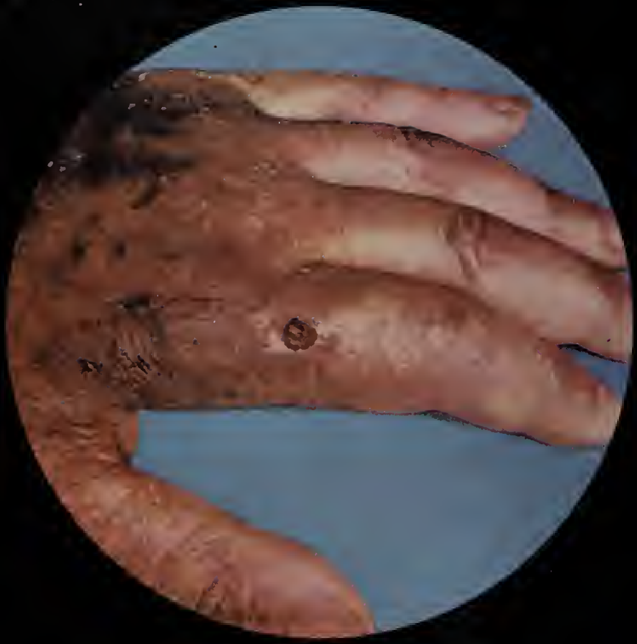
951

this ulcer did not heal...until its surface was cleared of dead tissue and debris



FIRST APPLICATION
ELASE Ointment is applied to a deep ulceration of a finger.

EIGHTEEN DAYS LATER
Healing has progressed rapidly without interruption or interference from any accumulated purulence or necrotic tissue. Greatly reduced size of lesion and minimal scar tissue indicate quality and vigor of healing which is almost complete.



to aid in debridement
to facilitate healing
in chronic cutaneous ulcers...

Elase® Ointment

(fibrinolysin and desoxyribonuclease, combined, [bovine] ointment)

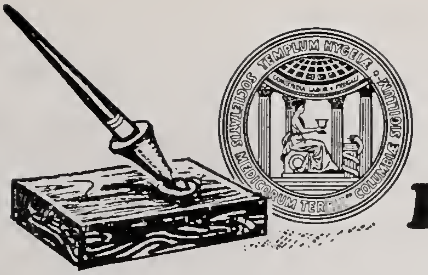
PARKE-DAVIS

By helping to remove dead tissue and debris from the ulcer's surface, ELASE Ointment creates a better environment for the elimination of infection, for healthy granulation...*for healing.* Its lytic enzymes effectively break down DNA in dead leukocytes and other debris...the fibrin in blood clots, serum, and purulent exudates...and the denatured proteins in necrotic tissue. Protein elements of *living* tissue are relatively unaffected. ELASE Ointment is indicated in stasis ulcers and in other infected or inflamed ulcers caused by circulatory disturbances. In cases requiring skin grafting, it is used preoperatively for debridement. For ambulatory patients debridement with ELASE Ointment is a convenient therapy and a regimen likely to be followed. *Precautions:* Observe usual precautions against allergic reactions, particularly in persons with a history of sensitivity to materials of bovine origin or to mercury compounds. *Adverse Reactions:* Side effects attributable to the enzymes have not been a problem at the dose and for the indications recommended. *Discussion:* Successful use of enzymatic debridement depends on several factors: (1) dense, dry eschar, if present, should be removed surgically before enzymatic debridement is attempted; (2) the enzyme must be in constant contact with the substrate; (3) accumulated necrotic debris must be periodically removed; (4) the enzyme must be replenished at least once daily; and (5) secondary closure or skin grafting must be employed as soon as possible after optimal debridement has been attained. It is further essential that wound-dressing techniques be performed carefully under aseptic conditions and that appropriate systemically acting antibiotics be administered concomitantly if, in the opinion of the physician, they are indicated. *Available:* ELASE Ointment is supplied in 30-Gm. tubes containing 30 units (Loomis) of fibrinolysin and 20,000 units of desoxyribonuclease with 0.12 mg. thimerosal (mercury derivative); and in 10-Gm. tubes containing 10 units of fibrinolysin and 6,666 units of desoxyribonuclease with 0.04 mg. thimerosal. ELASE Ointment has a special base of liquid petrolatum and polyethylene; contains sodium chloride and sucrose used during manufacture; is stable at room temperature through the expiration date stated on the package.

Parke, Davis & Company, Detroit, Michigan 48232

PARKE-DAVIS

48168



President's Page

A SUMMARY OF THE MEDICAL SOCIETY'S ACTIVITIES DURING 1969

The Medical Society of the District of Columbia with its 1,799 voting and 679 Associate members is a very active organization performing many services for its members and the public. The Executive Board, which governs the Society in the intervals between the annual meetings, the Society officers, the Executive Director and his staff, and the committees have had a very busy year.

The committees of the Society, from January through September, held 119 meetings. More than 280 participated in committee work, devoting more than 2,500 hours of their time in attending meetings. Untold hours have been spent by individuals gathering information, preparing background material, and carrying out projects developed in committee meetings.

Continued education of the members directly under the supervision of the Society has developed into 2 main projects. The Annals, one of the outstanding state society journals, keeps the members informed of many new developments in the practice of medicine. The Annual Scientific Assembly brings outstanding national authorities to the city for the enlightenment of all. Much of the continuing education in this city is done at the hospitals and medical schools by members of the Society.

Our committees supervise a professional liability insurance program, health insurance contracts for members, the disability insurance program, and a Kehoe retirement plan. The Board of Credentials has so far processed 113 new applications for membership and reached decision on 88 requests for change in membership status.

Committees have approved financial help to members in temporary distress, have assisted physicians seeking to enter practice in the city, and have given comfort and counsel to families of deceased members.

The Society has acted as the grantee organization for the Washington Metropolitan Regional Medical Program. More than 2 million dollars is invested in RMP projects to further the understanding and treatment of Heart, Stroke, Cancer, and Allied Diseases in the area. The projects range from educating physicians, nurses, and paramedical personnel to actual public services.

The Medical Society, through nominees, has members on the Board of Trustees of Group Hospitalization, Inc., the Board of Trustees of Medical Service of D. C., advisory committees to the Health Department, Comprehensive Health Planning Committee, the Health Facilities Planning Council, the D. C. Health and Welfare Council, and the Mayor's Task Force for reorganizing the Health Department and selecting a new health officer. The Society was represented on the committee to prepare a hospital pharmacy manual for the District and the surrounding states and has appointed delegates to the United States Pharmacopeial Convention in 1970. It has members on the D. C. Advisory Committee on Emergency Medical Services.

Committees have worked diligently on solutions to air and water pollution, problems of alcoholism, drug dependence, and narcotics abuse. Safety on the streets has been improved through assisting the Traffic Bureau on eliminating physically and mentally unfit motor-vehicle operators. Committees have helped with plans for disaster control, a proposed helicopter ambulance service, and emergency care for citizens both on a day-to-day basis and when major problems develop.

Many grievances between patients and physicians have been resolved satisfactorily. Problems of ethics receive necessary and continuous attention. Assurance of proper fee payments under health insurance contracts is a continuous function of a Society committee. Utilization of hospital and nursing home facilities has been under the supervision of a committee, and the Society is offering supervision of the utilization of medical procedures to the administrators of Medicare, CHAMPUS, Medicaid, and health insurance companies. Peer review of utilization matters is available to all members. The Society's Relative Value Scale is now in use by Medicaid, Medicare, and Medical Service of D. C.

With the help and advice of the Medical Society a reasonably workable Medicaid program for physicians' services is in operation by the Health Department. Under the influence of the Medical Society and others most of the hospitals in the city can now receive full-cost payment for care of Medicaid patients.

During this year the Health, Education, and Welfare Department precipitously proposed the transfer of St. Elizabeths Hospital from the National Institute of Mental Health to the District Health Department. The Medical

Society, with many others, opposed the transfer, and now HEW has a committee studying the problem, with the Medical Society well represented.

Medical legislation as it affects the practice of medicine in the District of Columbia is a major concern. We have proposed legislation, and 2 bills of ours—one relating to transport of blood fractions within the District and one on important changes in the Medical Practices Law—have been approved by the House of Representatives and are awaiting Senate action. We have helped prevent passage of an unfair tax law that would have penalized professional people. We have been instrumental so far in preventing improper modification of the law governing the practice of optometry in the city. We have been involved in studying, and expect to influence passage, modification, or rejection of at least 10 other pieces of legislation of a local nature that are before Congress at the present time. We hope before long to have the zoning regulations changed to permit physicians to have offices in residential neighborhoods without penalty. The newly formed Legislative Committee has a large order of work cut out for it.

The Society sponsored a very successful screening clinic during Community Health Week in October. Among many other projects, too numerous to list, with which the Society has concerned itself were coördinating religion and medicine in the care of patients, physical exercise for all as a way to health, and aid to young people engaged in strenuous sports. Our public relations activities, through television, radio, newspapers, and the Speakers Bureau, have been greatly expanded this year.

I wish to take this opportunity to thank all the members of the Society who have given so generously of their time and skill to make 1969 another successful year in the history of the Medical Society of the District of Columbia.

HIGHLAND HOSPITAL

ASHEVILLE, NORTH CAROLINA

Founded 1904

A DIVISION OF THE DEPARTMENT OF PSYCHIATRY OF DUKE UNIVERSITY

Accredited by the Joint Commission on Accreditation and Certified for Medicare

Complete facilities for evaluation and intensive treatment of psychiatric patients, including individual psychotherapy, group therapy, psychodrama, electro-convulsive therapy, Indoklon convulsive therapy, drugs, social service work with families, and family therapy; also an extensive and well-organized activities program, including occupational therapy, art therapy, music therapy, athletic activities and games, recreational activities, and outings. The treatment program of each patient is carefully supervised in order that the therapeutic needs of each patient may be realized.

High school facilities for a limited number of appropriate patients are now available on grounds. The School Program is fully integrated into the hospital treatment program and is accredited through the Asheville School System.

Complete modern facilities with 85 acres of landscaped and wooded grounds in the City of Asheville.

Brochures and information on financial arrangements available
Contact: Mrs. Elizabeth Harkins, ACSW, Coordinator of Admissions

or

Charles W. Neville, Jr., M.D.

Assistant Professor of Psychiatry and Medical Director

Area Code 704-254-3201

Editorials

"In the Beginning..."

William Anders: In the beginning, God created the heaven and the earth. And the earth was without form and void and darkness was upon the face of the deep. And the spirit of God moved upon the face of the waters. And God said, let there be light, and there was light. And God saw the light and that it was good, and God divided the light from the darkness.

James Lovell: And God called the light day, and the darkness He called night. And the evening and the morning were the first day. And God said, let there be a firmament in the midst of the waters. And let it divide the waters from the waters. And God made the firmament and divided the waters which were under the firmament from the waters which were above the firmament. And it was so. And God called the firmament heaven. And evening and morning were the second day.

Frank Borman: And God said let the waters under the heavens be gathered together in one place and let the dry land appear. And it was so. And God called the dry land earth, and the gathering together of the waters called He seas. And God saw that it was good.

And from the crew of Apollo 8, we pause with good night, good luck, a Merry Christmas and God bless all of you—all of you on the good earth.

As we near the close of the years of the 60's, a decade which will always be remembered for man's first landing on the moon, it seems appropriate to echo the above message from outer space which electrified us on Christmas Eve 1968. The bleak surface of the moon, as described by the orbiting astronauts a year ago, made our own earth seem greener and fairer. God saw that His creation was good, and it behooves each one of us, in his or her own way, to strive to add to and not to diminish that goodness.

MERRY CHRISTMAS!

Early Detection of Disease

One of the charges to Occupational Medicine is the early detection of disease. This is a responsibility for which it is uniquely fitted.

From the time of the preplacement health appraisal of the applicant for employment to the last physical examination prior to his retirement the health and safety of the worker are under the regular surveillance of the Occupational Health team. Through disease detection screening programs, physical examinations to determine occupational fitness, follow-up examinations to determine the progress and response to treatment of medical disabilities, and other periodic health evaluations, frequent attention is given to the emotional and physical status of the employee, and early detection of disease is often a result.

The managers of businesses have come to recognize that they have significant investments in their workers and that it pays to safeguard their health. The absent-ill employee may be paid although he contributes nothing to the operation of the business, and his hospitalization and fees for physicians' services may have been paid for, all or in part, by the company. His replacement on his job while he is absent because of illness must be paid for by the company. If the severity of his illness is such that it leads to early retirement or death, his valuable services are lost to the company prematurely. Business managers, for obvious reasons, are for any programs which will reduce the morbidity and mortality of illnesses in their workers.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Occupational Medicine, as a subspecialty of Preventive Medicine, is concerned with reduction of the frequency and severity of disease. As a result, occupational physicians are interested in any plan which will implement the early detection of disease. With early detection, early treatment under the care of the employee's personal physician will decrease morbidity and mortality and decrease the time lost to his job.

Voluntary periodic physical examinations at the request of the worker, health appraisal examinations at the request of his supervisor, occupational physical examinations for those workers who are in pursuits in which the condition of their health affects their ability to do their jobs with safety, not only to themselves but to their fellow workers, all give the occupational physician opportunities for the early detection of disease. Periodic follow-up of employees with known chronic disease states, such as diabetes, hypertension, epilepsy, cardiac disorders, etc., indicates the efficacy of treatment and the degree of cooperation of the employee with his personal physician. Often, the occupational physician and the personal physician, working together for the welfare of the patient, can improve the patient's health to the degree that neither could accomplish alone.

As the demand for medical services increases and prepayment plans make them available to more people, some of the traditional methods of practice will change significantly. Already, multiphasic health-screening programs and automated laboratory procedures are having a profound effect in some areas of medical practice and are, in many instances, implementing the early detection of disease.

By wider use of health-screening techniques, the occupational physician will be able to detect more disease earlier. By earlier referral to the personal physician, it should be easier to bring the worker's disease under control. With decreased morbidity and mortality everybody benefits—the worker, his family, his physicians, his employer, and his community.

L. A. Pyle, Jr., M.D.
Medical Director, The Chesapeake and Potomac Telephone Company

No Smoking Week

No Smoking Week, January 11–17, will mark the sixth anniversary of the Surgeon General's Report on Smoking and Health. By harnessing the resources of many organizations there will be an intensification of educational efforts to alert the public on the dangers of cigarette smoking. A wide variety of programs will be used to reach physicians, dentists, nurses, health professionals, youth and lay adults—in fact, as many segments of the community as possible.

"How to Help Patients Give Up Smoking" will be the theme of a special meeting on smoking and health for area physicians, January 14, in the auditorium of the D.C. Medical Society Building. The speaker will be Dr. Donald T. Fredrickson, author of "How to Help Your Patient Stop Smoking."

In his work, Dr. Fredrickson points out: "To be effective, the physician must know where he stands on the cigarette controversy. He must know his facts and he must formulate a clear position regarding his patients' smoking behavior. A vague, poorly defined idea that smoking is deleterious to health will not do. Once the cigarette issue has been raised, a patient will press with numerous questions and will expect forthright and intelligent answers.

"The physician who has only a hazy understanding of the relationship of smoking to cancer, respiratory disease and cardiovascular disease will feel uncomfortable in dealing with these questions.

"Half-hearted, watered-down instructions to stop smoking may be worse than no instructions at all. Smokers frequently search for excuses to continue smoking and may interpret the doctor's uncertainty as lack of interest in smoking habits or possibly even as an implied endorsement to continue smoking."

How Dr. Fredrickson handles this problem and the successful methods he has employed in his practice can be yours by attending the special educational program for area physicians, January 14.

Prior to No Smoking Week, January 11–17, area physicians are urged to become active participants in the forthcoming observance by

—Advising relatives, friends and patients convincingly of the immediate and long-term ill effects of smoking.

—Eliminating smoking areas where the physician has jurisdiction or influence, for example, the office, hospital and clinic.

—Participating in educational programs in the community, particularly schools, churches, service and civic clubs, and community organizations.

—Setting an example himself, at least in the presence of patients, during the special week.

If you are still a smoker, vow to give it up yourself so that you can honestly advise your patients to "go and do likewise"!

The special week in the District of Columbia is being sponsored by the D.C. Interagency Council on Smoking and 45 volunteer and governmental organizations.

Ralph G. Beveridge
Chairman, D. C. Interagency Council on Smoking

Sealtest
EGG NOG
Season's Best

A $50,000 Christmas Gift!

Fifty thousand dollars is what the Board of Trustees of the American Medical Association hopes to collect from American physicians in a unique humanitarian project aimed at completing the education of 3 sons of a dedicated Vietnamese physician-educator, the late Tran Anh. Dr. Anh, head of the Anatomy Department of Saigon University School of Medicine and Acting Director of the University Medical Center, was shot to death, almost certainly by the Viet Cong, on his way home from the University, March 4.

Following his death the 3 sons were threatened at various times, and their mother, Madam Tran Anh, asked representatives of the AMA Vietnam Medical School Project in Saigon to help her make it possible for the youths to continue their education in America.

The full story of this project and how it came into being appeared in the *American Medical News* of September 29. The 2 younger sons, Tu and Quynh, have been enrolled this fall in the International Center for Language Studies in Washington, D. C., and hope to enter college soon. The eldest, Tuan, has entered the University of Louisville as a graduate student in the Department of Anatomy. He plans to return to Vietnam upon completion of his studies.

The AMA, with the aid of other organizations, is trying to find sponsors for the 2 youths.

Contributions to the fund may be sent to the American Medical Association (payable to the AMA and designated for the Tran Anh family), 535 North Dearborn Street, Chicago, Ill. 60610. Donations are not tax-deductible because they do not meet the requirements of the Internal Revenue Service. But a share in this project would be a worthy Christmas offering.

A.L.E.

▶DOCPAC BRIEFS

"Something More Precious Than Gold . . ."

Recently I saw an advertisement by the Warner & Swasey Company of Cleveland, Ohio, headlined, "Something more precious than gold is flowing out of this country." The advertisement went on to say:

"Character, integrity, self-reliance—it is the loss of these American traits that is leaving us more impoverished than the outflow of gold.

"As long as Americans earned what they were paid, produced more for more wages, saved for their own security, paid their bills and demanded others do the same—as long as Americans acted like Americans there was no worry about gold, or balance of payments, or value of the dollar. The dollar was impregnable because American character was behind it.

"But when the greedy something-for-nothing, the whining somebodyelse-not-me selfishness have sapped American character, American strength goes out with it, as it always does."

DOCPAC, the Political Action Committee of the District of Columbia, endorsed by your Medical Society, is dedicated to keeping America free and strong. Your dollars help elect men to Congress from both political parties who are committed to that idea and cause. Join DOCPAC now if you are not already a member. Individual membership is $20; family membership, $30.

William H. Cooper, M.D.
Chairman, D. C. Political Action Committee

Mead Johnson–pharmaceuticals created for your specialized clinical needs

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her
break an
emerging
habit
pattern...

GYNOREST®
(DYDROGESTERONE)

helps break the emerging habit pattern of nonorganic primary dysmenorrhea.

Early relief of primary dysmenorrhea in the adolescent may lessen its tendency to become a habit pattern "which is very difficult to interrupt."* Dydrogesterone proves to be "...an extremely satisfactory drug...the most conservative type of progestational agent..."* for relief of severe and incapacitating dysmenorrhea in adolescents.

Gynorest provides these distinct advantages

normal cycles usually undisturbed... no inhibition of ovulation...occasional breakthrough bleeding can usually be controlled by dosage adjustment

mild, infrequent side effects... withdrawal is seldom required

freedom from estrogenic and androgenic effects... progestational in action

MeadJohnson
LABORATORIES

Contraindications No serious untoward reactions to Gynorest have been reported and there are no known contraindications to its use. There have been no adverse effects observed clinically on the hepatic, renal, or hemopoietic systems. **Precautions** Before hormonal treatment is considered in patients with excessive or abnormal uterine bleeding, the cause of such bleeding should be determined on an individual basis. Appropriate procedures should be used to determine whether an organic lesion or systemic disease is the cause of the bleeding. Although never reported for Gynorest, it should be borne in mind that other progestogens have been observed to cause fluid retention which on occasion may result in exacerbated attacks of epilepsy, migraine or asthma. **Adverse Reactions** Gynorest appears to be nontoxic. Mild gastrointestinal complaints such as nausea, diarrhea, or constipation have rarely been reported, but have not necessitated withdrawal of the drug. There have been no endocrinologic side effects such as masculinization of a female fetus, virilization of a female patient, or any corticosteroid activity reported from the use of Gynorest. Breakthrough bleeding can usually be controlled by increasing the dosage or by giving the drug in smaller doses at more frequent intervals to maintain a more constant blood level. **Dosage and Administration** Complete details are included in the package insert. Additional information may be obtained from Mead Johnson Laboratories. **Supplied** 10 mg. White Scored Tablets, bottles of 100, or 5 mg. White Scored Tablets, bottles of 50.

*Jones, Georgeanna S.: Maryland Med. J. 16:45, 1967.

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NEW MEMBERS

Active

R. Marshall Ackerman, M.D. Office: 1918 K Street, N.W. Born in McKeesport, Pa. Medical degree: University of Pittsburgh, 1962. Specialty: Orthopedic Surgery.

Roy P. Altman, M.D. Office: Children's Hospital. Born in New York City. Medical degree: New York Medical College, 1961. Specialty: General Surgery (Pediatric).

Robert J. Carnathan, M.D. Office: 916 19th Street, N.W. Born in Paterson, N. J. Medical degree: Georgetown University, 1962. Specialty: Dermatology.

Nancy K. France, M.D. Office: George Washington University Hospital. Born in Portland, Oregon. Medical degree: Northwestern University, 1963. Specialty: Anesthesiology.

Arthur I. Freeman, M.D. Office: Providence Hospital. Born in Bronx, N. Y. Medical degree: State University of New York, 1965. Specialty: General Practice.

Virginia Ling, M.D. Office: Walter Reed Medical Center. Born in Canton, China. Medical degree: University of Zaragoza, Spain, 1961. Specialty: Pathology.

Jules S. Neviaser, M.D. Office: 1918 K Street, N.W. Born in Washington, D. C. Medical degree: George Washington University, 1964. Specialty: Orthopedic Surgery.

Michael G. Seremetis, M.D. Office: 1234 19th Street, N.W. Born in Thessaloniki, Greece. Medical degree: University of Thessaloniki, 1951. Specialty: Thoracic and Cardiovascular Surgery.

Banad N. Viswanath, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in Bangalore, India. Medical degree: Government Medical College, Mysore, India, 1960. Specialty: Internal Medicine.

Associate

Pacifico V. deJesus, Jr., M.D. Office: University of Pennsylvania, Philadelphia. Born in Onon, Bataan, the Philippines. Medical degree: University of Santo Tomas, 1962. Specialty: Neurology.

Edwin Hillel Kolodny, M.D. Office: National Institutes of Health. Born in Boston, Mass. Medical degree: New York University School of Medicine, 1962. Specialty: Neurology (Neurochemical Research).

Lamberto Lopez, M.D. Office: 400 Forest Avenue, Buffalo, N. Y. Born in the Philippines. Medical degree: University of Santo Tomas, 1961. Specialty: Psychiatry.

Ronald Ottenberg, M.D. Office: 1400 Spring Street, Silver Spring, Md. Born in Washington, D. C. Medical degree: George Washington University, 1959. Specialty: Orthopedic Surgery.

David E. Rosenman, M.D. Office: St. Elizabeths Hospital. Born in Norristown, Pa. Medical degree: Jefferson Medical College, 1968. Specialty: General Practice.

Resident-Intern

Hugo V. Caesar, M.D. Office: Freedmen's Hospital. Born in Trinidad, W.I. Medical degree: Howard University, 1968. Specialty: Surgery.

William P. Walker, Jr., M.D. Office: Freedmen's Hospital. Born in Denmark, S. C. Medical degree: Howard University, 1967. Specialty: Radiology.

HEALTH DEPARTMENT NOTES

Area A Community Mental Health Center

A joint plan for an Area A community mental health program has been agreed upon by the D. C. Department of Public Health and the Georgetown University School of Medicine. Existing facilities of both the Health Department and the University will be utilized. Area A is a geographical designation west of Rock Creek Park.

To be included in Area A's mental health program is a Day Treatment Program, a Youth Services Clinic, Emergency Service and Inpatient Care.

Services presently provided by the D. C. Department of Public Health are an Adolescent Clinic in Georgetown and emergency and inpatient facilities, housed at the Area C Health Center, on the grounds of D. C. General Hospital. The Georgetown University School of Medicine is providing limited services at Georgetown University Hospital Outpatient Clinic and a "walk-in emergency clinic" (open from 9 a.m. to 5 p.m. weekdays). Area A long-term patients are referred to St. Elizabeths Hospital.

To supplement these services a grant of $220,228 has been requested from the National Institute of Mental Health in order to establish a day treatment program at 3246 P Street, N.W., in the same building as the Health Department's Adolescent Clinic.

Area A has an unusual concentration of both the young and elderly, with more than 15 per cent of the population aged 65 or over (the highest proportion in the District).

The proposed Youth Services Clinic will provide emergency, rehabilitative and consultative services. As part of Youth Services, a proposed Children's Outpatient Clinic will, for the first time, offer a children's clinic for Area A, providing diagnosis, therapy and consultation. To provide a more unified program, the existing Health Department's Adolescent Clinic at P Street and the proposed Children's Clinic will be reorganized into a Youth Services Clinic. A small Children's Outpatient Clinic functions at Georgetown University Hospital now, which emphasizes diagnostic interviews and limited treatment. This facility will continue to serve the entire Metropolitan Area.

Adult outpatient services are presently available at the Outpatient Department of the Georgetown University Hospital where medical students and psychiatric residents work under the supervision of the faculty and staff. These facilities, while not limited exclusively to Area A patients, will give priority for admission to Area A residents.

The education and consultation services of Georgetown University Medical Center will begin to offer mental health consultation to Area A agencies and individuals.

All of these existing and proposed services will accept patients on referral from each other; personnel will participate in conferences and exchange of records. The community mental health center will encourage this exchange to promote continuity of care for the patient. Additional continuity is possible because the psychiatric residents, at times, will treat a patient on the Area A inpatient ward and will also see that same patient later at the day-care clinic.

The Director of the Area A mental health center will be employed by the D. C. Department of Public Health, hold a faculty appointment in the Department of Psychiatry, Georgetown University School of Medicine, and be responsible to both institutions for the program. Other professionals, especially psychiatrists, will also be appointed to the Georgetown faculty. One position, the Chief of the Adolescent Clinic of the D. C. Department of Public Health (a psychiatrist), is presently funded by the University.

The 34-bed ward for Area A, located on the grounds of D. C. General Hospital, also has been working closely with the Georgetown Medical School. The staff psychiatrists working on the inpatient ward hold full-time academic appointments in the School of Medicine.

Close liaison is maintained with the Department of Psychiatry at Georgetown through its approved training programs in general and child psychiatry. Three psychiatric residents and 4 medical students are assigned full-time to the Area A inpatient service, located on the grounds of D. C. General Hospital. No additional training or educational services are planned.

FESTIVITIES SANS STRESS
in country house-party mood. Holiday merry-making and golf at package rates Xmas week. Rooms, suites with mountain view. Data, reservations, call (in D.C.) 293-5350.

THE BOAR'S HEAD INN
Charlottesville, Virginia

Graduate students of social work and psychology from Catholic, Howard, Maryland, and George Washington Universities also assist in the mental health programs.

The Georgetown University Medical Center has a research program in Area A and will continue to do so. No further research and evaluation specific to Area A has been proposed.

Several sources will aid in the funding of the mental health center. The Health Department has primary responsibility for the program. The University funds a position in the Adolescent Clinic and will continue this support. Medicare and Medicaid are also available as well as some specialized funding, i.e., training funds from the Vocational Rehabilitation Department. Private health insurance also will provide some funds, and this may be a significant source since Area A serves a large middle-class population.

RAYMOND L. STANDARD, M.D., M.P.H.
Acting Director, D. C. Department of Public Health

Drug Abuse—Manifestations of the Glue Sniffer*

1. Odor of substance inhaled on breath and clothes.
2. Excess nasal secretions; watering of the eyes.
3. Poor muscular control, drowsiness or unconsciousness.
4. Presence of plastic or paper bags or rags containing dry plastic cement.

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* This information is reproduced from "Parental Alert," copies of which may be obtained on request to the Broward County Medical Association, 2200 South Andrews Ave., Fort Lauderdale, Fla. 33316.

Report on First Romanian Congress of Obstetrics and Gynecology

Bucharest, Romania, October 16–18, 1969

Professor Dan Alessandrescu, Chief of the Polizu Hospital in Bucharest, Romania, presided as President of the Congress. The following subjects were reported in detail: interruption of the course of pregnancy (demographic, medicobiologic and psychosocial aspects); the adaptative capability of the reproductive organs of the female after exeresis and functional surgery; and adaptative capabilities of female reproductive organs following functional surgery of vagina, fallopian tubes and ovary. Drs. David H. Kushner and John Marlow presented a paper on "Therapeutic Abortion by Aspiration Curettage," which was discussed by Dr. Dean Martin, all of the staff of the Columbia Hospital for Women in Washington, D. C. In addition to many fine presentations, there was a well planned social program, both for delegates and wives.

Professor Alessandrescu assigned doctors to the foreign delegates for their entire stay. These doctors, all multilingual, were members of the attending hospital staff. There was simultaneous translation of all papers into English, French and German.

Of 600 delegates present at the Congress, we were the only American delegates. Among the visiting delegates were Professor Hubert deWatteville, of Switzerland; Professor S. Horsky, of Czechoslovakia; Professor Dr. K. Thomsen, from Hamburg, Germany; and Professor Robert Contamin, of Grenoble, France.

David H. Kushner, M.D

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Psychiatric Hospital, Inc.
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OWEN W. BRODIE, M.D.
Associate

ROBERT H. CRYTZER
Administrator

The District of Columbia Society for Crippled Children: Annual Report of the Medical Director for 1968–1969

Twenty-five years ago, September 1944, being disturbed because of a lack of an educational program for handicapped children of preschool age, the Board of Directors of the D. C. Society for Crippled Children instituted such a procedure in a room loaned to them by the Good Will Industries.

Beginning as a demonstration project, its student body consisted of those children who were physically, emotionally, and behaviorally handicapped as well as those who were blind and deaf and also those who had tactile, auditory and visual perceptual problems, the so-called minimal brain-damaged, and finally the culturally disadvantaged children.

This was one of the few schools that was organized for that purpose at that particular time. It was a demonstration project, and its purpose was to keep these children out of the custodial institutions and to show that they could be improved.

We believe that at least to some extent we have fulfilled the goals of the organizers.

A new attitude toward the so-styled mentally retarded child has developed. Today, we are approaching the point where he is considered to have a disguised mentality. Therefore, an attempt is being made to determine the capabilities of the sensory, associative and motor components of his personality. Means are being devised to prevent any deficiencies and if they do occur to establish methods of circumventing and complementing the abnormal functions so that the whole personality can, at least, approach normal.

The incidence of enrollment of these children, particularly those in custodial institutions, has decreased.

The parents, in most instances, have developed a healthy attitude toward their child with his handicap. The same is true of their neighbors and friends and the general population.

There has been a great surge on the part of physicians, biologists, psychiatrists, psychologists, educators and therapists to do research into the causes, the nature, and the correction of the problems involved.

The great influx of schools in this area that are oriented toward these studies is an indication of the stimulation given to them by those pioneers who instigated this work.

We therefore, as a group, can be proud of the part we took as one of those pioneers and leaders and the results that have been obtained.

Our school provides an outpatient type of approach to the care of these children, including all ages. The services include clinical, psychological, psychiatric, educational and therapeutic (physical, occupational, speech) approaches to improvement. It is particularly oriented toward education of the handicapped (be it physical or psychological) preschool child.

It is our hope that the time will come when we shall be able to arrange for the education and training of the older children, those between the ages of 7 and 12, who have been excluded from the facilities available at this time.

TABLE 1: Total Registration

	1967	1968	1969
New cases	138	161	140
Old cases	492	471	497
Total	630	632	637

Our total registration included children from each of the above-named groups. Depending upon their disability, some receive 1 or more clinical services; others merely attend school or they may be administered 1 or more therapies. There are those children whose parents need counseling regarding the proper adjustment of the family constellation. In many instances advice is necessary to provide the parents with the knowledge of facilities for the proper placement of some of these children.

All of these activities are provided by 1 or more members of the professional staff, and the total registration denotes the number of children assisted by us.

During the past 3 years (table 1) the total registration has remained essentially the same. These children reside in the entire Metropolitan Area.

During the past several years there has been a gradual phasing out of the children whose parents reside in Virginia. These children come mainly for clinical services because the schooling and therapy for those of preschool age are provided by a superior type of facility—the Cerebral Palsy Center of Northern Virginia. The older children from that area receive their schooling and therapy principally in the public school and public health facilities.

Forty-six per cent of our registration consists of children who are under 7 years of age. This is a healthy factor; the earlier the treatment the better the prognosis.

Many years ago it was stated that the ratio of handicapped boys to handicapped girls was 3:2. This is borne out by our statistics for the past several years.

The statistics for the percentage distribution according to the income of the parents, the source of referral, and the percentage distribution according to I.Q. do not seem to vary from year to year. The problem appears to have no regard for family structure. More frequent referrals are made by clinics and schools.

Only 19 per cent of the children are untrainable; 15 per cent are trainable; 20 per cent are slow learners; and 46 per cent are of a superior intelligence. Of course, many of those in the lower groups have been found in the past to have a disguised mentality and after being exposed to a school approach, have improved their I.Q.'s.

From a diagnostic standpoint, 78 per cent of our children have some form of cerebral dysfunction due to inflammatory, toxic infections, vascular accidents, or congenital abnormalities occurring either during the gravid period, during parturition, or during the neonatal period. Many others belong in one of those categories but the history obtained was too vague to enable us to make a definite and accurate determination. Many of these children had more than 1 symptom or a multiple syndrome, and practically all of them needed a program of special schooling, psychological evaluation, and parental guidance, and also physical, occupational, and speech therapy.

The clinic schedule is about the same each year. The policy for conducting the services for these children is under the direct supervision of the Medical Director. The enrollment in the clinics includes not only the children in the school but also those who have previously been in our school and also those whom we have followed for many years because of their physical and mental problems. With these, our findings and recommendations are sent to the referring doctor, clinic or school so that they may be fulfilled. In return we receive comments from those institutions regarding their progress.

When necessary the children receive braces or other prosthetic appliances, such as shoes, artificial legs, glasses, and hearing aids. These are provided by our Brace Fund when patients are unable to pay.

Our teachers are well qualified. They have rapport with the children, empathy, and have the ability to circumvent any learning abnormalities and supplement cultural deficiencies. Besides this, and most important, they have sufficient self-discipline to realize their own deficiencies and request help when necessary.

There was a variance between the number of physical therapy sessions in 1967 and 1969. In 1967 there were 3 therapists, in 1969 there were only 2. Also in 1968 there were 2 occupational therapists, while in 1969 there was essentially only 1.

The number of volunteers seems to be increasing, gradually—5 per cent—but we do have assurances from the Red Cross and some of the unattached that it will be greater next year. The members of the Junior Auxiliary have been very faithful in aiding the staff at the various seasonal parties, but their activities have not been recorded.

We believe that we have had a good year. The total enrollment has increased. In general, the entire statistical status is essentially the same. In the areas where there is a deficit the cause was due to the inability to get a satisfactory replacement. All of those we do have are well trained and are dedicated to their work.

An analysis of the improvement of these children indicates that if the same techniques of training were applied to a large population, 90 per cent would show improvement of a mean of 7 or 8 months. The statisticians would not consider this to be significant. When we are dealing with heterogeneous groups, however, the significance would at least be adequate. In fact, some groups contain children whose deficiencies in some parameters were such that they would not improve in that particular parameter over many years although they would progress in others.

We still maintain the respect of the professional groups, not only locally but throughout the United States and foreign lands. Many visitors come to observe and to learn. Local schools use our facility for the clinical training of their students. Our moving picture "Montessori in Action" has been shown and is still being shown throughout this country and in many foreign lands. Members of our staff have conducted educational programs for various professional groups whose particular penchant is the training of the child with a handicap.

(*Continued on page 702*)

Physicians Needed to Train Aborigines in Malaysia

In the jungles of Malaysia a new kind of medicine is proving to be much more powerful than the ancestral practices.

The young aborigines, 18 to 25 years old, are graduates of a basic course given by MEDICO, a service of CARE. They attend classes at the jungle installation in Gombak Hospital and are taught anatomy, physiology and preventive medicine. They learn how to take blood pressure and pulse rate and to diagnose disease. Large spleen with fever and chills is malaria (red pill), cough with fever is pneumonia (green pill), and cough with blood is tuberculosis (yellow pill).

The girls trained as midwives are taught to determine an unborn baby's position, listen to fetal heartbeat, anticipate complications of a pregnancy, and to deliver a baby in sanitary conditions.

Ten to 20 aborigines are trained each year, and, so far, 120 of them have completed the course. Half remained in the Gombak hospital to work under the supervision of the hospital staff, which included a MEDICO doctor and 2 nurses. The others returned to their people in the jungle to serve as local "doctors" and midwives in 100 medical outposts.

Sixty of these are equipped with a 2-way shortwave radio to maintain daily communication with the hospital. Members of the MEDICO team visit the jungle outposts regularly by helicopter, and in emergencies patients are flown to Gombak for special treatment and care.

Teaching is the most important service of the 7 MEDICO teams around the world. There are about 50 American and Canadian doctors, nurses and technicians assigned to MEDICO installations in Afghanistan, Algeria, Dominican Republic, Honduras, Tunisia, and 2 in Malaysia.

These medical pioneers, serving 2-year terms, work with their local counterparts to help improve the quality of medical care. They are assisted by visiting medical and surgical specialists who volunteer at their own expense for 1 month.

Many who serve with MEDICO overseas find the work so rewarding that they remain for another term or more. Those in Gombak, who hop by helicopter from one outpost to another, say it is particularly rewarding to see tribes, which still hunt with blowpipes, enjoying the benefits of 20th century medicine.

Volunteers for 1-month tours are needed by MEDICO in all specialties but particularly in orthopedics and ophthalmology. Further information may be obtained from the MEDICO office at 2007 Eye Street, N. W., Washington, D. C. 20006; telephone 223-2277.

New Surgeon General of Army

Lt. General Hal Bruce Jennings, Jr., MC, USA, who has served as Deputy Surgeon General since July 1, 1969, was appointed Surgeon General of the Army, effective October 1. He succeeds Lt. General Leonard D. Heaton, Surgeon General of the Army for 10 years.

LT. GENERAL HAL B. JENNINGS, MC, USA
Surgeon General of the Army

General Jennings, a graduate of the University of Michigan School of Medicine, Class of 1941, was commissioned First Lieutenant in the Medical Corps of the U.S. Army Reserve the same year. He interned at the University Hospital, Ann Arbor, until July 1, 1942, when he was ordered to active duty.

During World War II he served for 2½ years in the South Pacific. In May 1946 he returned to the United States as a Captain in the Regular Army.

In 1951, with the rank of Lt. Colonel, he reported to Brooke General Hospital in Fort Sam Houston, Texas, where, as Assistant Chief of Plastic Surgery, he assisted in caring for Korean casualties. While on this assignment he qualified and was certified as a diplomate of the American Board of Plastic Surgery. Later he became Chief of Plastic Surgery at Brooke and set up the first approved residency for training plastic surgeons for the Army.

In 1956 he was assigned to Walter Reed General Hospital as Chief of the Plastic Surgery Service, and was promoted to Colonel in 1959. He served various tours of duty both overseas and in the United States until May, 1968, when he was assigned as Command Surgeon, U.S. Military Assistance Command, Vietnam. He was promoted to Brigadier General on September 1, 1968, and to Lt. General on October 1, 1969.

Brig. General Spurgeon H. Neel, Jr., MC, USA, has been sworn in to the post of Deputy Surgeon General of the Army.

LETTERS TO THE EDITOR

Women in Medicine and the Woman's Medical College

HEW plans have been laid and Federal funds allocated for a 50 per cent increase in medical students in the next 4 years. This increase in medical students will, if limited predominantly to male applicants, as is still done, be drawn from a stratum of the applicant pool previously rejected by medical schools. Eventually this must lead to lower medical standards.

Half of the U.S. population, women, represents a potential source of physicians with the cream of the crop virtually untapped by medical admissions committees. Women comprise only 9 per cent of American physicians in contrast to women's expanded role in Eurasian medicine, and many of these 9 per cent are foreign-trained. Women applicants to medicine have increased over 300 per cent in 36 years, but their per cent acceptance has unaccountably fallen. Over the same time male applicants have increased only 29 per cent, while the male proportion accepted has unaccountably risen.

A panel discussion was held at Woman's Medical College in Philadelphia on September 4, 1969, on a proposal to allow an unlimited number of male students at this hitherto women's medical school. An estimated 80 per cent of comments from the participating audience, mostly from alumnae and women faculty members, expressed strong disapproval over the proposal. On the following day the College Board of Corporators voted to accept the proposal, but with temporary limits for the coming 3 years on the number of men to be admitted. This temporary limitation was a forced concession to the overwhelming alumnae demands that Woman's Medical College protect its traditional role as a citadel for women students of medicine.

Woman's Medical College was founded in 1850 to train women doctors. Under the influence of the previous nonphysician dean and that of the current dean and president, the College leadership and majority faculty today are men, with views not sympathetic to the purposes and character of this women's college of medicine. With virtually untapped national womanpower available to them, the male leadership at the College wish to restrict admission of women in order to admit elsewhere-rejected male applicants.

It can be predicted that Federal funds already allocated for American medical schools will be restricted or withheld from a school so bent on mediocrity. The Government will surely view with disfavor an institution promoting rather than discouraging present discriminatory policies toward women applicants. Can support be given a school whose beskirted faculty are harassed and pogromed into extinction? Who among alumnae shall not withdraw support from a school betraying both them and the purpose for which they established it?

Frances S. Norris, M.D.
Surgical Pathologist, Doctors Hospital,
Washington, D.C.

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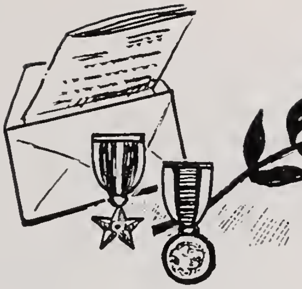

News & Personals

Summary of Executive Board Actions

Proceedings of October 27 Meeting

Dr. Paul R. Wilner, Chairman, presided at the meeting which followed dinner for Board members in the Exhibit Hall of the Medical Society. Present were Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Robert J. Coffey, Henry D. Ecker, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. The meeting was called to order by Dr. Wilner at 7:10 p.m.

The minutes of the September 22 meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

September	30	Committee on Medical Ethics and Professional Conduct
October	1	Fee Review Committee
	2	Breast Cancer Study Committee
	2	Physician Placement Committee
	3	Relative Value Study Committee
	6	Committee on Environmental Health
	9	Medical Bureau Committee
	9	Subcommittee on Community Health Week
	13	Nominating Committee
	14	Board of Credentials
	16	Committee on Mental Health
	21	Grievance Committee
	23	Committee on Communicable Diseases
	23	Traffic Committee
	27	Finance Committee

Board of Credentials: On recommendation of the Board of Credentials, 9 applicants were elected to Active membership, 5 to Associate, and 2 to Resident-Intern membership. Their names appear on page 688. Approval was given to the following changes in membership status:

Transfer

Associate to Active: Edward Harvey Weiss

Resignation

Active: George Joseph Lucas

Regional Medical Program: The Board accepted for information a report on RMP activities as submitted by Director Arthur E. Wentz.

DOPAC: After some discussion the Board declined Dr. William H. Cooper's recommendation that DOCPAC be made a Standing Committee of the Society.

Medical Bureau: A motion was made and carried to approve the recommendation of the Medical Bureau Committee that Bureau fees be increased $4.00 per subscriber per month effective December 1, 1969, and that the rates for Group Health, Inc. and the Washington Clinic be increased in the same proportion as individual rates.

American Health Systems, Inc.: Dr. Leo J. Schildhaus, President of this new organization, appeared to personally present proposed plans whereby AHS would provide space and administrative services to physicians which would enable them to practice more efficiently but, also, independently. After presenting his proposal, Dr. Schildhaus departed.

The Secretary was instructed to advise Dr. Schildhaus that he present the proposed plans to the AMA Judicial Council for opinion and advice.

Examinations by Licensed Nurses: In response to a request from the D. C. Nurses' Association to reconsider a "Joint Statement on Vaginal and/or Rectal Examinations during Labor by Licensed Professional Nurses in the District of Columbia," a motion was made and carried that the previous action of the Executive Board on March 24, 1969, be reaffirmed.

Student AMA: The Board discussed a letter dated October 10, 1969, from Mr. John Mikos, President of the SAMA Chapter at Howard University, asking that a representative from each of the local medical schools be invited to the Society's next official meeting. The Board agreed to invite a SAMA representative from each of the 3 medical schools to the Annual Business Meeting scheduled for November 19.

Mental Health Committee: President Bacon summarized the current legislation considered by the Committee at its meeting, October 16. Dr. Bacon stated that he authorized the Committee's participation in the forthcoming hearings on legislation having to do with amendments to the D. C. Hospitalization of the Mentally Ill Act of 1964 (the Ervin Act).

AMA Council on Medical Service: The Board had no suggestions for nominees to this Council.

Funding of Medical Scholarships: The contents of a letter from Dr. Maurice Gordon addressed to Dr. Wallace M. Yater were discussed. The letter suggested that 199 physicians in the United States establish $5,000.00 scholarships to "help children of less fortunate area residents become physicians." It was agreed that the letter be forwarded to the Health Foundation for its consideration.

There being no further business, the meeting was adjourned at 9:30 p.m.

GENERAL NEWS

The Division of Public Affairs of the American Medical Association has developed a **1969 Congressional Directory to the 91st Congress.** This pocket-sized booklet lists alphabetically each state's senators and representatives, their office room numbers, building, switchboard number, and individual extensions. It features Senate and House Committees and their memberships, phone numbers for the Committee offices, and the names and means of contact for "officials in the Executive Branch of importance to medicine." Single copies are available upon request to the AMA Division of Public Affairs, 535 North Dearborn Street, Chicago, Ill. 60610.

The Child Development Center of Georgetown University plans to open a **"halfway house"** in early 1970. This will be a preschool day-care center in which specialists will attempt to find the most effective way to teach each handicapped child.

"After the diagnosis, and whenever possible and desirable," says Dr. Robert J. Clayton, the Director, "handicapped children will be placed in regular nursery schools with normal children. Teachers for these nursery schools will receive special training from the Georgetown preschool center staff."

The new Day-Care Center will accommodate approximately 75 handicapped children in different sessions. The work will be supported by a grant of $30,000 from the U. S. Office of Education.

The Metropolitan Medico-Legal Society holds 4 meetings annually at each of which informative speakers discuss medicolegal problems. At the first meeting of the season, October 22, it was decided to invite members of the legal profession to join as associate members. Membership in the Society is open to all interested physicians in the Metropolitan Area. An application for membership may be obtained by writing to the Secretary, Dr. Mervin H. Zimmerman, 1801 Eye Street, N.W., Washington, D. C. 20006.

Dr. C. Rollins Hanlon, thoracic surgeon and Surgeon-in-chief of the St. Louis University Hospitals, succeeded Dr. John Paul North, October 10, as **Director of the American College of Surgeons,** which has headquarters in Chicago. Dr. North retired after serving as Director of the College for 9 years.

Dr. Harry F. Dowling retired, December 1, as Professor and Head of the Department of Medicine at the University of Illinois College of Medicine in Chicago. He expects to devote his next years to writing books and articles for medical journals. Dr. Dowling lives in Great Falls, Virginia.

"Cancer Answers," a telephone information service in the Washington Metropolitan Area, now in its eighth consecutive year, sponsored by the D. C. Division of the American Cancer Society, is giving a recorded message from November through January, 1970, on how to quit the cigarette smoking habit. This message changes the normal emphasis from pointing up the risks of cigarette smoking to recommending specific steps the smoker can take to break the cigarette habit. The number to dial is 223-2600.

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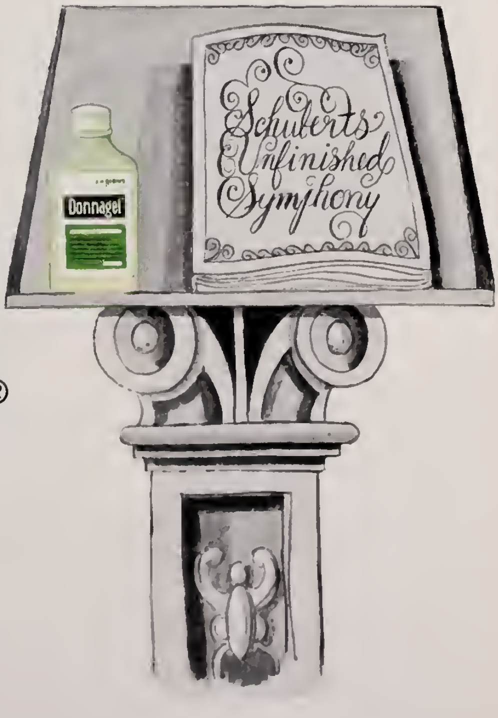

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PERSONALS

Dr. Victor H. Esch, of Potomac, Md., a member of the D. C. Board of Police and Fire Surgeons, was awarded a Bronze Bar for Valor at a luncheon meeting of the Metropolitan Washington Board of Trade at the Mayflower Hotel. Two members of the D. C. Fire Department Rescue Squad No. 1 were also cited for valor. Dr. Esch's citation read:

> "On June 6, 1968 Doctor Victor H. Esch distinguished himself for outstanding courage and devotion to duty during a construction cave-in in the 2000 block of Jefferson Davis Highway, Arlington, Virginia, when he descended into an opening left by concrete forms to work under wet concrete and steel bars to administer first aid to trapped construction workers.
>
> "Dr. Esch remained with the trapped and injured workers, working with the 2 firemen under tons of wet concrete until the last man was released approximately 2 hours later."

The Commissioners' Committee of Award for Meritorious Service was established by an Act of Congress in 1929. Because of the large number of persons killed and injured in this accident the Arlington Fire Department asked for assistance from the D. C. Fire Department. This is probably the first time that a member of the D. C. Medical Society has ever received an award of this kind.

Dr. Ralph W. Wadeson joined the staff of The Psychiatric Institute of Washington, D. C. on November 1 and will direct a new service dealing with the evaluation and treatment of emotional and behavioral disorders associated with organic brain diseases, epilepsy, and other physical illnesses. The service will include inpatient, day hospital, and outpatient care.

Dr. Wadeson, a graduate of the Medical College of Alabama, was formerly with the National Institute of Mental Health in the Adult Psychiatry Branch, Psychosomatic Section. Prior to his present appointment he was in private practice in Washington. He is Clinical Assistant Professor of Psychiatry at Georgetown University School of Medicine and consultant to the National Institute of Mental Health, the National Institute of Neurological Diseases and Blindness, the Fairfax-Falls Church Mental Health Center, and the Neighborhood Poverty Workers of U.P.O.

Patient Referrals Needed

The Immunology Branch of the National Cancer Institute is engaged in a broad program of hematopoietic cell transplantation in an effort to correct bone-marrow failure and immune deficiencies. A corollary effort is an evaluation of the antitumor effects of immune competent cell transplantation into patients with a malignancy. For consideration for admission to this study is a limited number of patients with (1) bone-marrow failure or malfunction due to a nonmalignant cause, (2) malignancy, and (3) an immune deficiency syndrome. Patients should fulfill the following criteria:

1. The disease process will lead to a fatal outcome within 3 to 6 months, based on the best available clinical judgment.
2. No further effective treatment exists for the disease.
3. The patient has 1 or more relatives available as potential donors of bone marrow or hematopoietic cells.
4. The patient and family have appropriate motivation for the transplant.

To evaluate such patients for inclusion in the program would involve a visit to the outpatient department at the Clinical Center and the obtaining of blood from the patient and his relatives for histocompatibility testing, which will be done in the Immunology Branch laboratories. If the patient is hospitalized and too ill to come to the Clinical Center, a staff member will visit the hospital and arrange to get the requisite blood samples. Patients who qualify for hematopoietic cell transplantation will be admitted to the Clinical Center of the National Institutes of Health.

Physicians interested in having patients considered for these studies may call Dr. G. N. Rogentine at (301) 496-2454 or Dr. John L. Fahey at (301) 496-5461.

OBITUARIES

John Lorain DeMayo, M.D.

(1895–1969)

Dr. John L. DeMayo, general practitioner in Washington and Bethesda, Md., for many years, died, August 31, 1969, in Sibley Memorial Hospital. He lived at 5632 Bradley Blvd., Bethesda.

Dr. DeMayo was born, January 10, 1895, in New Haven, Conn. He attended Georgetown University, transferred to Yale University for a year, and then returned to Georgetown to graduate from its School of Medicine in 1926. He interned at old Emergency Hospital and at Casualty Hospital, and after serving a residency at the old Homeopathic Hospital (now a part of Sibley) he opened an office for general practice. He moved his offices to Bethesda in 1958, where he practiced until his retirement early in 1968.

Elected to Active membership in the Medical Society of the District of Columbia in 1927, Dr. DeMayo became a Life member in 1967. He was a member of the American Medical Association and Montgomery County (Md.) Medical Society. He was also a member of the Veterans of Foreign Wars, the Yale Club of Washington, and the Touchdown Club.

Dr. DeMayo is survived by his wife, Mrs. Ora Ward DeMayo, of the home address; 2 sisters, Mrs. Rose D'Addetta and Mrs. Mollie Matteis, of New Haven, Conn; and a brother, William S. DeMayo, also of New Haven.

William Calhoun Stirling, M.D.

(1894–1969)

Dr. W. Calhoun Stirling, Washington urologist for 42 years, died in Sulphur Springs, Texas, September 8, 1969, where he had lived since 1962.

Dr. Stirling was born in Sulphur Springs, March 7, 1894. After receiving his medical degree from Vanderbilt University School of Medicine in 1917, he interned at Newark City Hospital, Newark, N. J.

During World War I he served with the Army Medical Service Corps in France. After the war he practiced in Winston-Salem, N. C., and a few years later moved his practice, limited to genitourinary surgery, to Washington.

He was Chief of Urology at Montgomery County (Md.) General Hospital and was on the staffs of Suburban, Sibley Memorial, Doctors, and old Garfield Memorial Hospitals. He was Associate Professor of Genitourinary Surgery at Georgetown University from 1927 to 1939. He was a frequent contributor to the literature, Collaborating Editor of the Encyclopedia of Medicine, and devised numerous urological instruments.

During World War II he assisted the District War Finance Committee, serving as Bond Chairman for the medical profession in 5 campaigns.

Elected to the Medical Society of the District of Columbia in 1925, Dr. Stirling resigned in 1962 when he moved to Texas. He was a diplomate of the American Board of Urology and a member of the American Medical Association, the American Urological Association, the Southern Medical Association, the Montgomery County (Md.) Medical Society, the Virginia Medical Society, the International Medical Club of Washington, the Clinical Club of Washington, and the Hippocrates-Galen Society. He also belonged to the Chevy Chase Club and the Society of the Cincinnati.

Surviving him are 2 daughters, Mrs. Margheritta Loud, of Grosse Point, Mich., and Mrs. Elizabeth Cole, of Washington, and a son, E. Tillman Stirling, of Chevy Chase, Md.

Jules Daniel Damian, M.D.

(1905–1969)

Dr. Jules D. Damian, who had practiced medicine in the Washington area for more than 30 years, died at George Washington University Hospital, August 13, 1969. His offices and home were at 2741 34th Street, N.W.

Dr. Damian was born in Rochester, N. Y., September 1, 1905. He earned his Bachelor of Science degree in 1928 and his medical degree in 1930, both from Georgetown University. He interned the following year at Georgetown Hospital and completed a residency in surgery at St. Vincent de Paul Hospital in Norfolk, Va., in 1932.

In 1932 he began his practice of medicine in the District of Columbia. With the advent of World War II he enlisted in the Army and served in the Medical Corps from 1940 to 1946. During this period he practiced general surgery at Walter Reed Army Hospital. Following the War he resumed practice in Washington, devoting himself to internal medicine and obstetrics and gynecology.

Dr. Damian was elected an Active member of the Medical Society of the District of Columbia in 1947 and was a member of the American Medical

Association. He belonged to the Washington Golf and Country Club.

Surviving him are his wife, Mrs. Lucile Moore Damian, and 1 son, Jules Moore Damian, both of the home address. He also leaves 2 sisters, Mrs. Concetta Faulkner, of Bethesda, Md., and Mrs. Clotilla Dorling, of Falls Church, Va.

Helene Gilliaert Werner, M.D.

(1924–1969)

Dr. Helene G. Werner, co-chief of the Department of Anesthesia at Cafritz Memorial Hospital, died, September 15, 1969, at her home, 3036 Klingle Road, N.W.

A Washingtonian, born August 29, 1924, Dr. Werner graduated from Dunbarton College *magna cum laude* in 1946. After receiving her medical degree from Georgetown University in 1956 she interned and served a year's residency in pediatrics at Providence Hospital. From 1958 to 1960 she was resident in anesthesiology at George Washington University Hospital, then joined the teaching staff of the School of Medicine, first as instructor and later as Assistant Professor of Anesthesiology. Dr. Werner accepted her position at Cafritz Hospital in 1966.

Dr. Werner was a Fellow of the American College of Anesthesiologists and was Board-certified in anesthesiology. She was elected to Active membership in the Medical Society of the District of Columbia in 1961 and was a member of the American Medical Association, the Southern Medical Association, the Southern Anesthesia Society, the Association of American Medical Colleges, the International Anesthesia Research Association, and the D. C. Society of Anesthesiologists.

A coloratura soprano, Dr. Werner had attended the Peabody Conservatory of Music and sang at social and religious functions. She was a member of the Washington Oratorio Society and the Washington Opera Guild.

She is survived by her husband, Dr. Robert Stanton Werner; 2 daughters, Sharon and Lauren; and 2 sons, Christopher and Kevin, all of the home address. She also leaves a sister, Mrs. Zulma Hettrick, of Detroit, Mich., and a brother, Chester F. Bernard, of Silver Spring, Md.

John Winiford Rout, Jr., M.D.

(1916–1969)

Dr. John W. Rout, Jr., Washington ophthalmologist, died at Providence Hospital, August 30, 1969. His offices were at 3036 Georgia Avenue, N.W., and his home at 4016 19th Place, N.E.

Dr. Rout was born, October 26, 1916 in Kansas City, Missouri. He studied at Howard University, receiving his Bachelor of Science degree in 1939 and his medical degree from the College of Medicine in 1944. He interned at Harlem Hospital, New York City, the following year.

He enrolled in the Army Specialized Training Program in 1943, during World War II, and following his internship served in the Army Medical Corps Reserve until the end of 1945.

After engaging in general practice from 1946 to 1957 in Washington and in Fairmount Heights, Md., he turned to ophthalmology and served as resident physician in ophthalmology at Freedmen's Hospital for 3 years. He also took special courses in ophthalmology at the Armed Forces Institute of Pathology and with the American Academy of Ophthalmology. He was attending physician at Freedmen's and at the Washington Hospital Center.

He was elected to Active membership in the Medical Society of the District of Columbia in 1960. He was a member of the Medico-Chirurgical Society of the District of Columbia and Kappa Alpha Psi fraternity.

His wife, Mrs. Josephine H. Holland Rout, died 2 years ago. He leaves a daughter, Marisa Karen Rout, of the home address.

D. C. Society for Crippled Children

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Indeed, the volunteers, the administrative staff, the members of the Society, the Board of Directors, the Ladies' Auxiliary, the Executive Committee, the officers of the Society and the entire professional staff should be proud of their organization. According to their specific facet, each and every group is accountable for its coordinated and dedicated whole.

William P. Argy, M.D.
Medical Director

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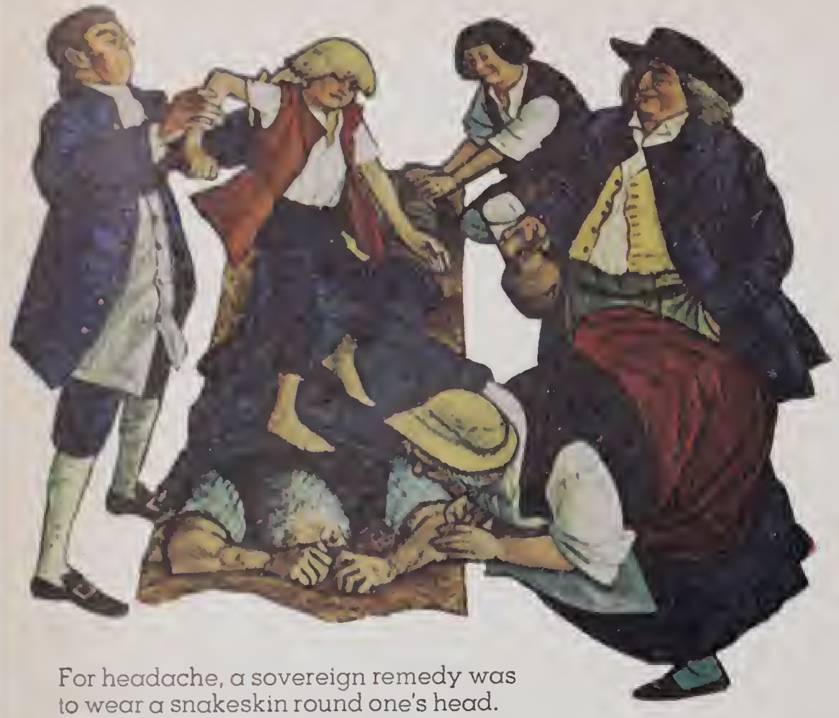

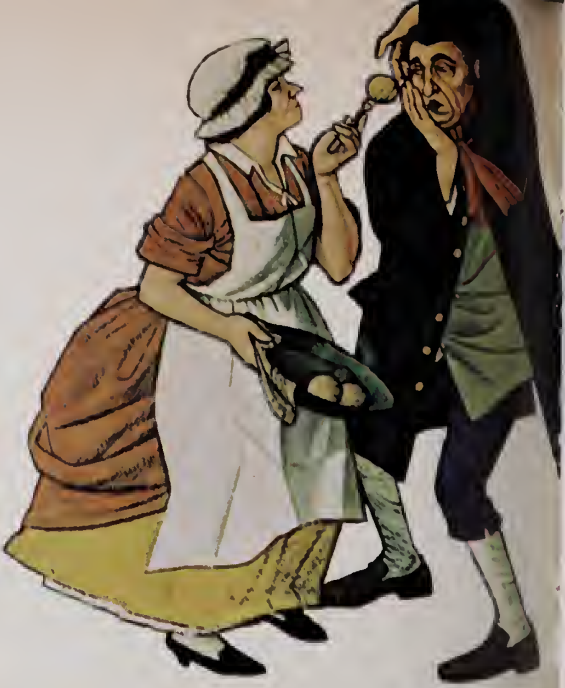

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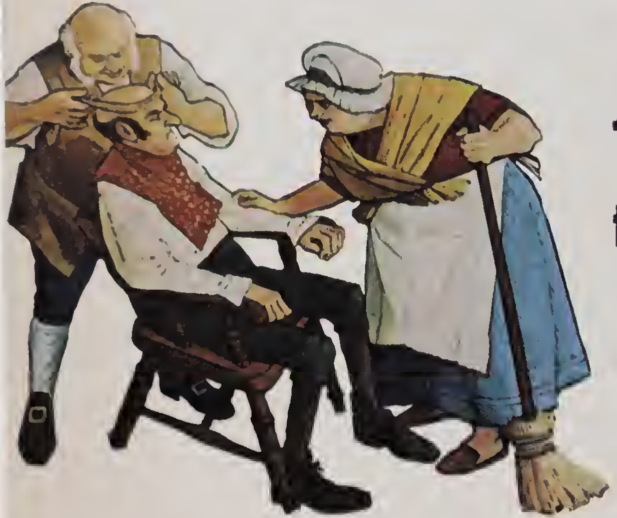

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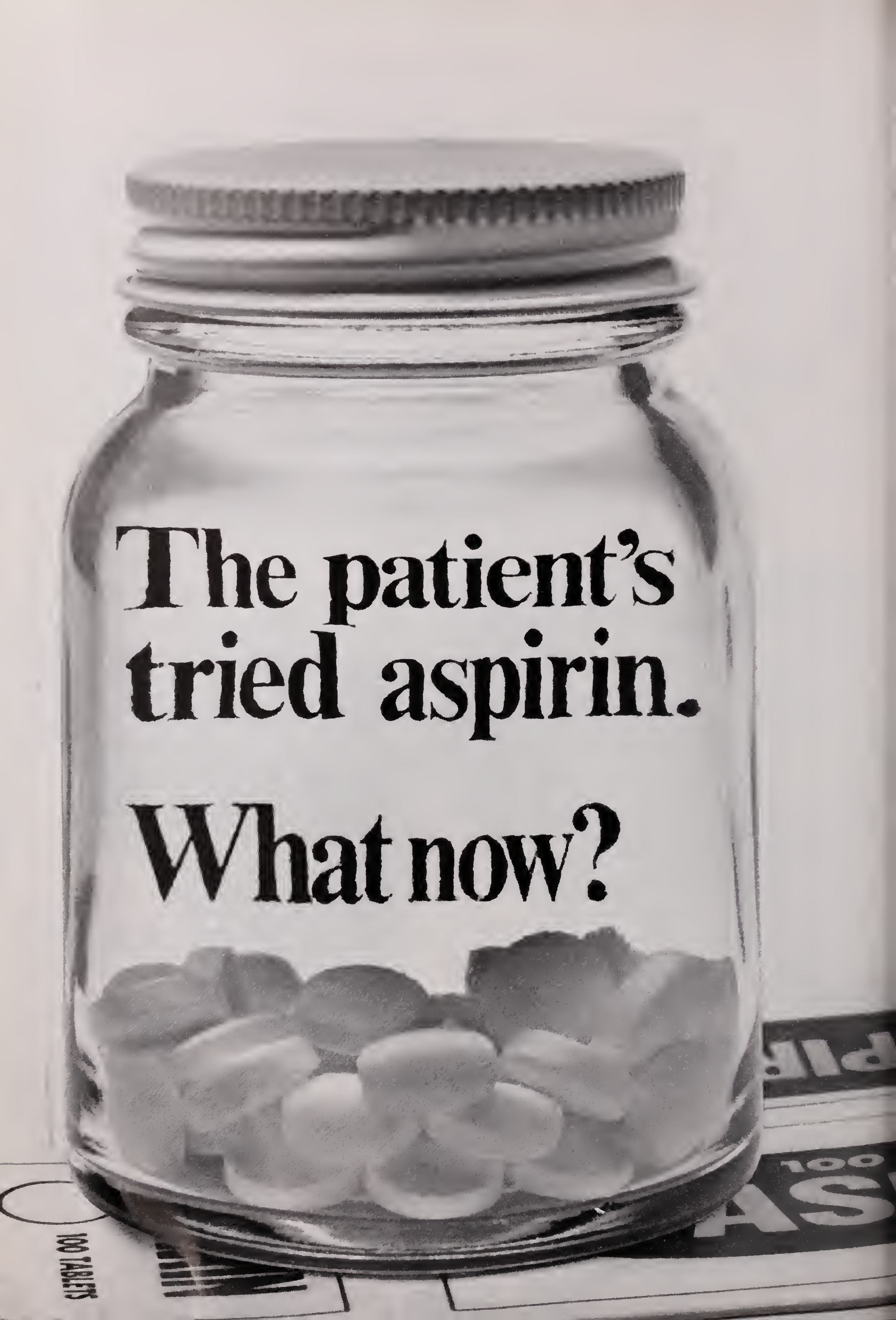
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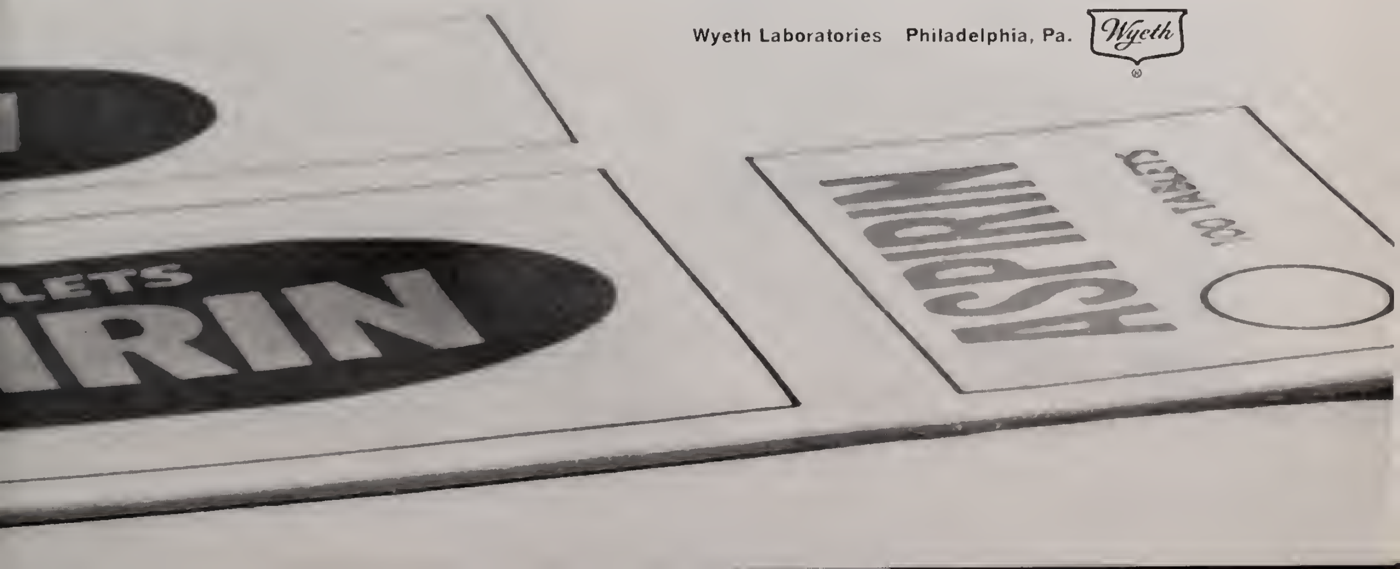

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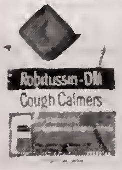

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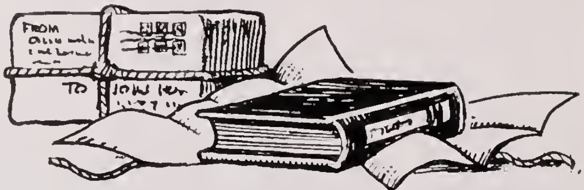

Books Received

Current Practice in Orthopaedic Surgery 1969. Volume 4. JOHN P. ADAMS, M.D., F.A.C.S., Editor. Price, $22.50. Pp. 286, with 322 illustrations. St. Louis: Mosby, 1969.

Current Concepts in Ophthalmology. Volume II. BERNARD BECKER, M.D., AND RONALD M. BURDE, M.D. Price, $21.00. Pp. 267, with 238 illustrations. St. Louis: Mosby, 1969.

The Practice of Refraction, 8th ed. SIR STEWART DUKE-ELDER, G.C.V.O., D.Sc., PH.D., LL.D., M.D., F.R.C.S., F.A.C.S., F.R.A.C.S., F.R.C.P., F.R.S. Price, $11.75. Pp. 329, with 244 illustrations. St. Louis: Mosby, 1969.

Ophthalmic Ultrasound: Proceedings of the Fourth International Congress of Ultrasonography in Ophthalmology, Philadelphia, Pennsylvania. Edited by KURT A. GITTER, M.D., ARTHUR H. KEENEY, M.D., D.Sc., LOV K. SARIN, M.D., AND DAVID MEYER, M.D. Price, $29.50. Pp. 374, with 623 illustrations on 296 figures. St. Louis: Mosby, 1969.

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Patient Care and Special Procedures in Radiologic Technology, 3rd ed. JOHN C. WATSON, R. T. Price, $8.25. Pp. 234, with 148 illustrations. St. Louis: Mosby, 1969.

Practical Urology. CHESTER C. WINTER, M.D., F.A.C.S. Price, $11.00. Pp. 249, with 251 illustrations. St. Louis: Mosby, 1969.

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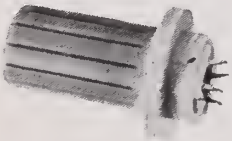

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January 17–22: American Academy of Orthopedic Surgeons. Palmer House, Chicago. Address: Dr. Charles V. Heck, Executive Secretary, 430 North Michigan Ave., Chicago, Ill. 60611.

January 18–20: Symposium on Drug Information for the Medical Profession. Marriott Twin Bridges Motor Hotel, Washington. Address: Mr. Paul de Haen, 11 West 42nd Street, New York, N. Y. 10036.

February 8–9: AMA Congress on Medical Education. Palmer House, Chicago. Address: Dr. C. H. William Ruhe, Secretary, AMA Council on Medical Education, 535 North Dearborn Street, Chicago, Ill. 60610.

February 25–March 1: American College of Cardiology. Rivergate, New Orleans, La. Address: Mr. William D. Nelligan, Executive Director, 9650 Rockville Pike, Bethesda, Md. 20014.

March 12–14: Southern Society of Anesthesiologists. Williamsburg Lodge, Williamsburg, Va. Address: Dr. Richard G. Zepernick, Secretary-Treasurer, Mercy Hospital, New Orleans, La. 70119.

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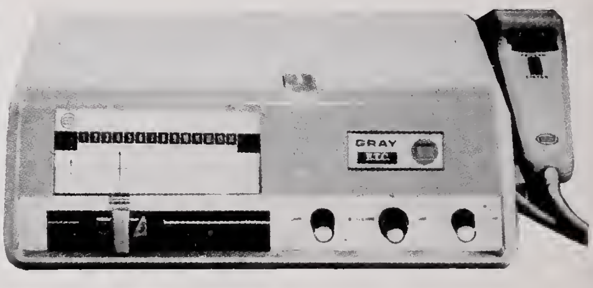

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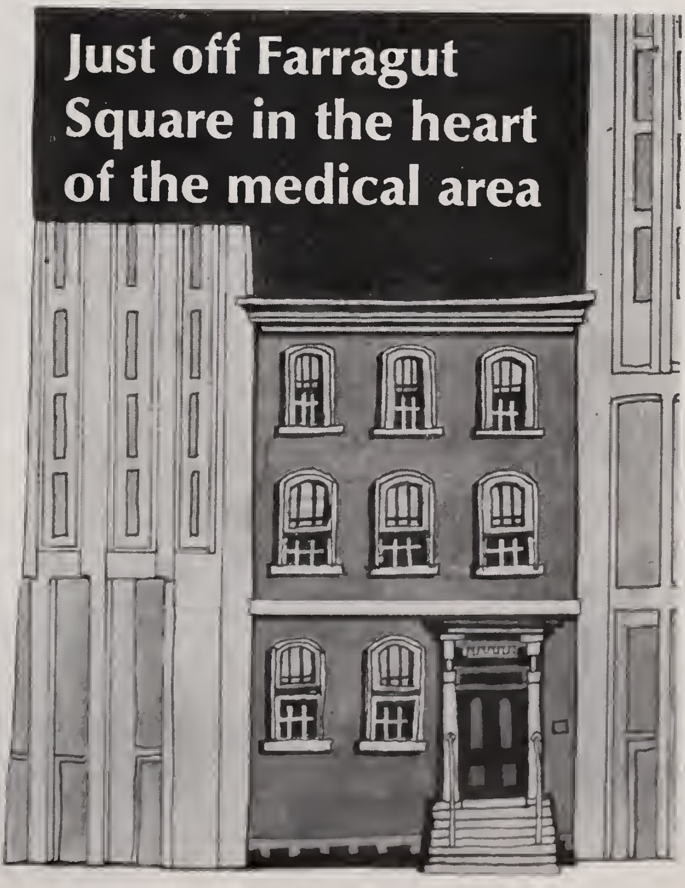
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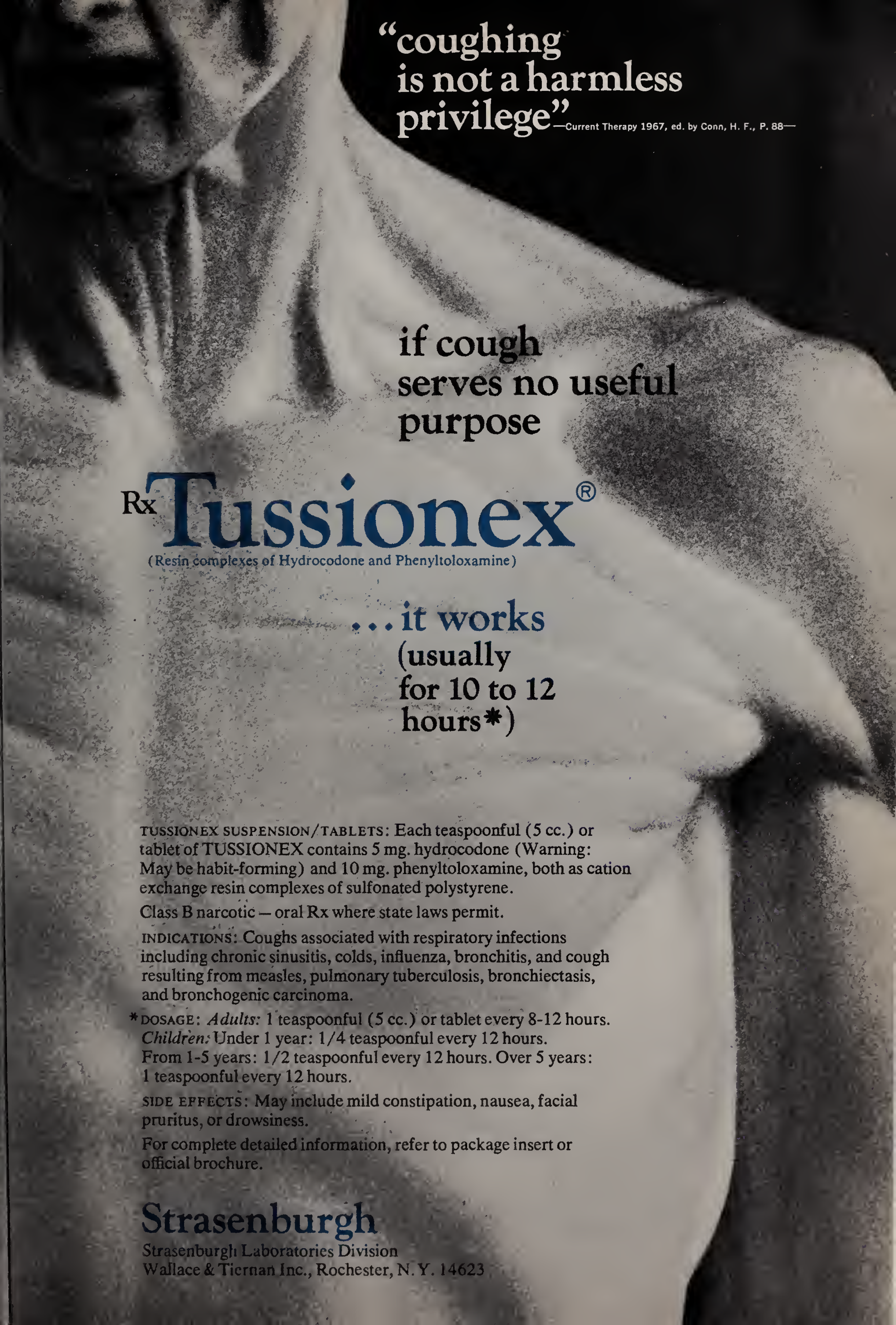

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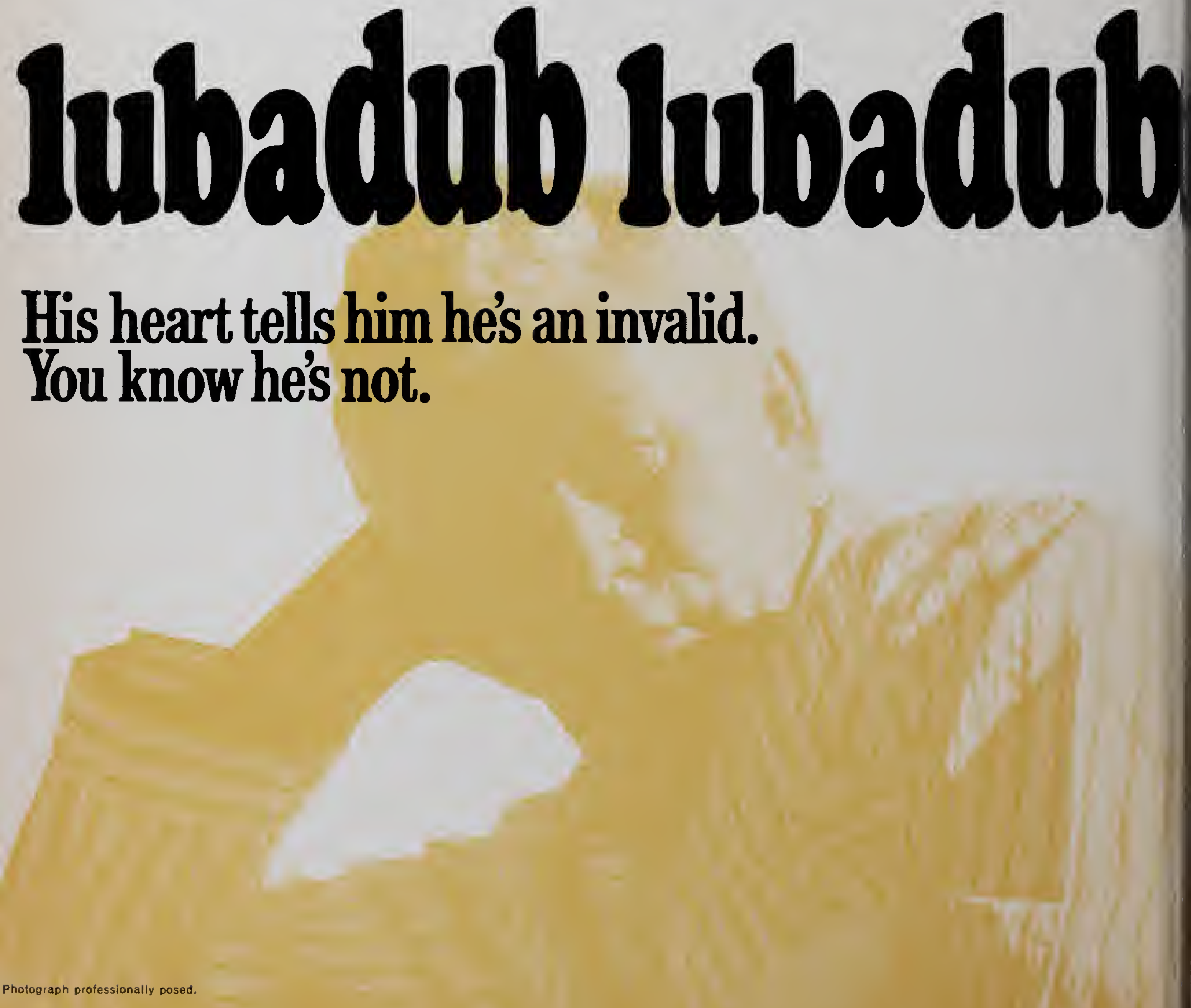
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Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

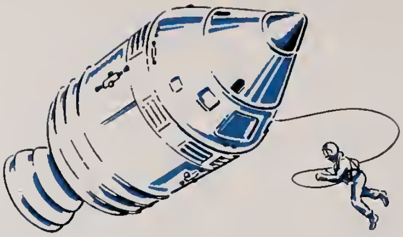
Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® [strip pack], Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

Wyeth Laboratories Philadelphia, Pa.

Equanil®

(meprobamate)



Man in space, now fait accompli, re-emphasizes the importance of Uro-Phosphate therapy. Research into the effect of space travel on the astronaut reveals that weightlessness causes loss of bone calcium. As the bones are required to bear less and less of the weight of the body they lose calcium, increasing the calcium content of the urine. When physical activity is reduced, the acidity of the urine should be adjusted to keep increased calcium in solution . . . . a prophylaxis to prevent kidney or bladder calculi.

Uro-Phosphate®

NOW A SUGAR-COATED TABLET

Each tablet contains: METHENAMINE, *300 mg.;* SODIUM ACID PHOSPHATE, *500 mg.*

Uro-Phosphate gives comfort and protection when inactivity causes discomfort in the urinary function. It keeps calcium in solution, preventing calculi; it maintains clear, acid, sterile urine; it encourages complete voiding and lessens frequency when residual urine is present.

Dosage:

For protection of the inactive patient 1 or 2 tablets every 4 to 6 hours is usually sufficient to keep the urine clear, acid and sterile.

2 tablets on retiring will keep residual urine acid and sterile, contributing to comfort and rest.

A clinical supply will be sent to physicians and hospitals on request.

Uro-Phosphate contains sodium acid phosphate, a natural urinary acidifier. This component is fortified with methenamine which is inert until it reaches the acid urinary bladder. In this environment it releases a mild antiseptic keeping the urine sterile.

Uro-Phosphate is safe for continuous use. There are no contra-indications other than acidosis. It can be given in sufficient amount to keep the urine clear, acid and sterile. A heavy sugar coating protects its potency.

WILLIAM P. POYTHRESS & COMPANY, INC., RICHMOND, VIRGINIA 23217
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